ELECTRICAL SOUTH

SEPTEMBER, 1950

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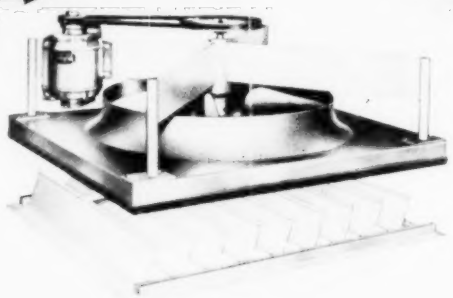
Easiest of all to install



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- Automatic ceiling shutter
- Certified P.E.M.A. air ratings
- Hunter highest quality construction
- Quiet and powerful
- Easiest of all to install
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• Other models with 7700 CFM and 9500 CFM

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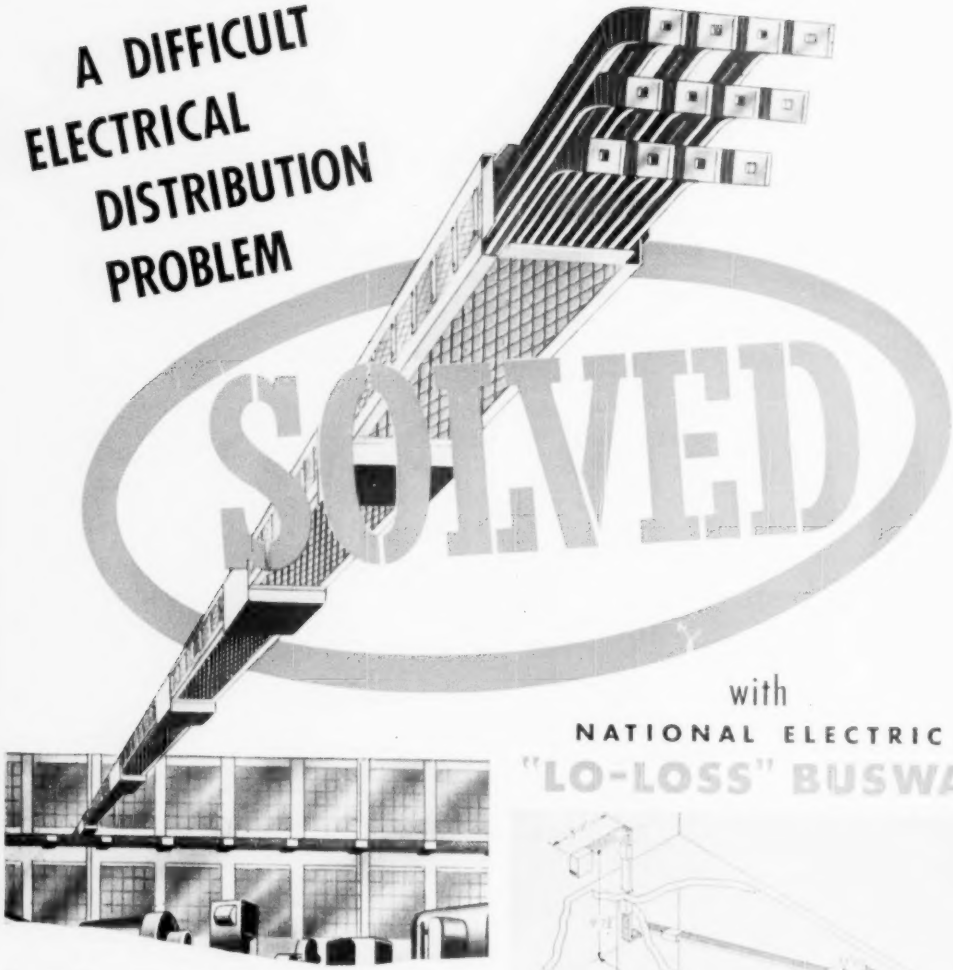


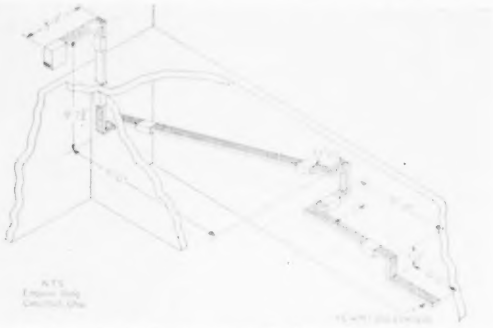
with

NATIONAL ELECTRIC

"LO-LOSS" BUSWAY

National Electric "Lo-Loss" Busway answered the need for a new electric feeder capable of carrying 2000 Amperes in The Enquirer Building in Cincinnati. The feeder required for the new service had to travel a circuitous route between existing electrical conduits, busways, steam lines, air-conditioning ducts and building beams. Busway was by far the simplest and easiest way to take care of the job.

National Electric "Lo-Loss" Feeder Bus with insulated copper bars mounted on close centers was found to be ideally suited for the application. Its low reactance, high efficiency and factory-fabricated sections met the job requirement of an easily installed, flexible system that would provide the additional capacity.



"Lo-Loss" Feeder Bus is specifically designed for transmission of electrical current up to 4000 Amperes at 600 volts or less. It's compact in design—easily installed. It's the most economical . . . efficient way to carry electric power (less than 2.2 volts drop per 100 ft.).

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★ [illegible]

★ [illegible]

★ [illegible]

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The MOST MODERN way of plant lighting

instant-start greater efficiency • lower-cost maintenance

complete range of systems for all industrial seeing requirements!

Designed for [illegible] Slimline Lamps (T-12 [illegible]) in lengths of 48", 72" or 96" [illegible] length. They are available with two lamps in three [illegible] and also [illegible] for one [illegible] lamp.

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SERVING THE 18 SOUTHERN AND SOUTHWESTERN STATES

Sept., 1950 Vol. 30 – No. 9

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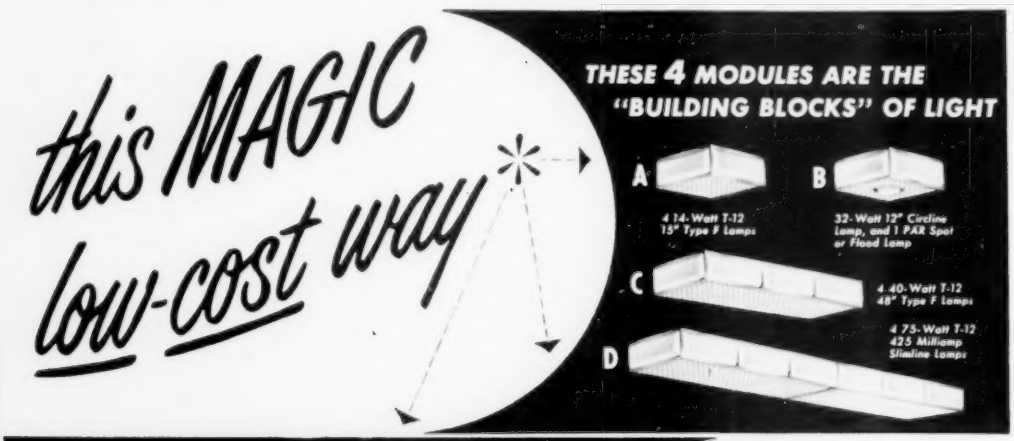

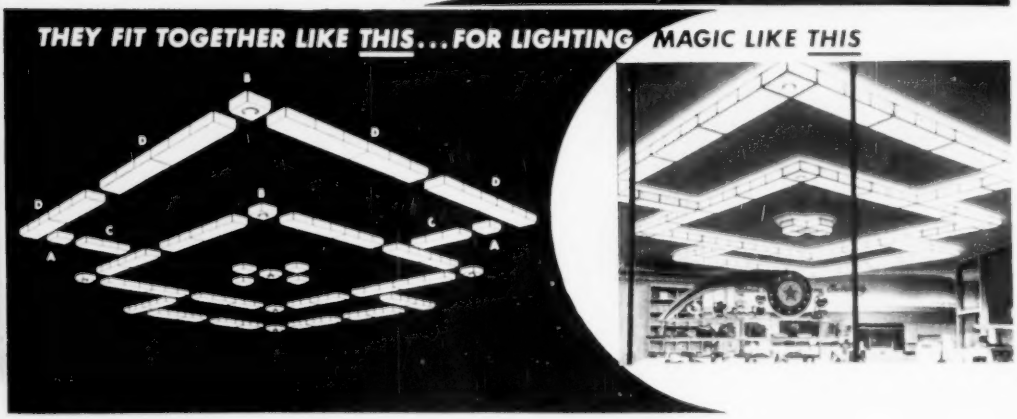

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Check these advantages

- Exceptional strength . . . tie rods fastened to side of pole to minimize "sway."
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For Non-Metallic Sheathed Cable

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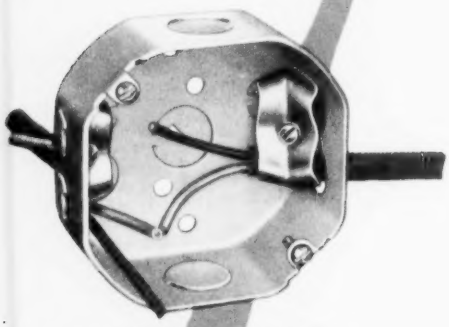
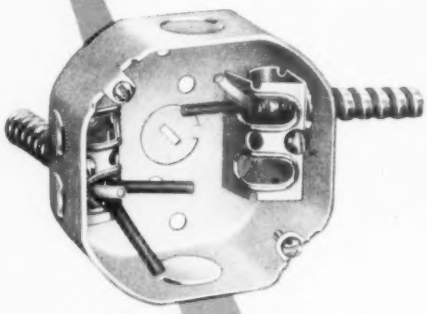


Whether **bottom** or side entry, this **smoothly rounded** clamp can be **depended** upon to hold the cable **firmly** with no possibility of **damage** to insulation.



Openings are **bushed** to prevent damage to **insulation**. Side or bottom entry can **be made** *without backing out* **screw**, and positive, non-slip grip **is** assured.

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"B" for Bar	54151-NE	54151-AE	"B" for Bar
"E" for Ears	54151-NSE	54151-ASE	"E" for Ears

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JUNCTION BOXES, CONDUIT FITTINGS AND ELECTRICAL SPECIALTIES

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CATALOGS and BULLETINS

Available Free to Readers of Electrical South upon Request

(Additional items will be found on pages 9, 95, and 97)

1001—Reactors. Selection of proper cast-in-concrete reactors for specific current-limiting requirements is simplified by a four-page bulletin, No. 600, issued by Morris Mfg. Corp., 1256 Atlantic Ave., Brooklyn 16, N. Y. This illustrated 8½ x 11-inch folder provides a convenient check list to help electrical engineers specify standard reactors or inquire about special installations.

1003—Circuit Breakers. Operating characteristics, schematic diagrams, and detailed performance data on foile magnetic breakers for branch circuit protection are provided in a four-page 8½ x 11-inch folder. Cutaway views showing construction details are included. Bulletin No. 525 is issued by Murray Mfg. Corp., 1256 Atlantic Ave., Brooklyn 16, N. Y.

1005—Building Wire, Cable, Conduit. Extensive technical data on a comprehensive line of electrical cable, building wire, and conduit raceways are provided in a new 86-page publication, General Catalog No. 500, issued by Triangle Conduit & Cable Co., Inc., 1906 Jersey Ave., New Brunswick, N. J. Handsomely bound in stock leatherette to take years of wear, this catalog also contains valuable information on electrical engineering and wiring standards for the aid of contractors, engineers, architects and industrial users.

1007—Panelettes. An illustrated 8-page folder describing Federal Nonk-O-T Panelettes is now available from Federal Electric Products Co., 30 Pine St., Newark 2, N. J. Clearly explained are uses, adding of circuits, wiring, flexibility of the unit, protection afforded, and elements of the panelettes. Illustrated are typical wiring diagrams, along with cutaway illustrations.

1011—Conduits. "National Electric Conduits" is the title of the new 30-page Catalog No. 603 which describes and illustrates the many types of electrical conduits that are manufactured by National Electric Products Corp., Chamber of Commerce Bldg., Pittsburgh 19, Pa.

1013—Proper Cable Sizes. A new booklet, "Selection of Proper Cable Sizes," has just been issued by General Electric's Construction Materials Advertising Department, Bridgeport, Conn. This publication deals with the method of determining cables and cable sizes of rubber-insulated rainbow cables. Types AVA, AVB, and AVL.

1015—Shunt Capacitors. A new bulletin, No. 21, on the use of shunt capacitors for power factor correction has been prepared by the James R. Kearney Corp., 4236 Clayton Ave., St. Louis 10, Mo., and is now available for general distribution.

1019—Service Panels. Information and prices on protective control centers for homes, apartment buildings, service stations, and industrial applications is contained in Bulletin 494, "New Push-Button Service Panels," issued by BullDog Electric Products Co., Detroit, Mich.

1023—Protective Control Centers. Information and prices on a new line of push-button protective control centers are contained in Bulletin 493, "BullDog Pushmatic and Pushmatic Electri-Centers." BullDog Electric Products Co., Box 177, Roosevelt Park Annex, Detroit 32, Mich., has made the bulletin available.

1025—Electrical Merchandise. Knox Porcelain Corp., P. O. Box 2031, Knoxville 1, Tenn., has available a 92-page catalog with data illustrating their complete line of wiring devices, neon sign insulators, radio antenna supplies, standard electrical porcelain, telephone insulators, switchboards, rack spools, guy strains, pin types, suspensions, and special porcelain of all designs.

1029—Wiring Devices. Catalog No. 49, "Leviton Wiring Devices," listing over 100 wiring devices including the new improved T-rated switch, has been released by Slater Electric & Mfg. Co., Inc.—56th St. & 37th Ave., Woodside, N. Y.

1031—Heating Units. The new Chromalox Catalog of Industrial Electric Heaters, Catalog 50, is available from Edwin L. Wiegand Co., 7600 Thomas Blvd., Pittsburgh 8, Pa. Four basic Chromalox units—strips, rings, tubularly, and cartridges—with wide variations in wattage, voltage, and sheath material are listed, as well as easy selection and application data.

1033—Wiring Devices. Slater Electric & Mfg. Co., Inc., of Woodside, N. Y., have added some additional devices to their catalog and price sheets. New inserts are available showing an improved ceiling receptacle with double contacts, and also silent mercury switches.

ELECTRICAL SOUTH,
806 Peachtree St., NE
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September, 1950

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(Print Plainly)

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Company _____

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City & State _____

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1013	1015	1019	1023	1025
1029	1031	1033	1035	1039
1041	1043	1045	1051	1053
1063	1071	1073	1075	1079
1081	1083	1085	1087	1089
1091	1093	1095	1097	1099
1101	1103	1105		

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New VARSITY NV SERIES

SPECIFICATIONS

Sturdy, 20 gauge steel, finished in white, high-reflection baked enamel with satin finish aluminum grey trim. Side panels of extruded plastic. Moulded one-piece plastic "egg-crate" louver gives 40° x 40° shielding angle. Louver hinged to swing from either side for easy relamping. Can be installed singly or in continuous runs. No couplers needed! Slimline models feature instant start 120, 200, 300 or 425 milliampere operation. Conventional 110-125 volts, 60 cycle A.C., with other voltages available.

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2 Optional reflector for increased downlight
3 Knockouts provided for completely flexible mounting arrangements.
4 Ribbed translucent curved-plastic side panels.
5 Upward light spill gives 40% indirect illumination
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8 Injection-moulded plastic louver with 40° x 40° shielding angle
9 High reflection baked-enamel reflector
10 No couplers required for continuous row installation

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1035—Electrical Fittings and Devices. Buchanan Electrical Products Corp., 1290 Central Ave., Hillside, N. J., offers a 12-page catalog covering solderless connectors, cable and conduit fittings and wiring devices. It contains complete data on "Splice Caps" and "Termend" lugs for wire splicing and terminating, box connectors for metallic and non-metallic sheathed cable, both plain and insulated conduit bushings, conduit locknuts, knock-out plugs, terminal blocks, attachment plugs, fuse pullers, etc. Suitable illustrations, dimensional data, and application instructions are included.

1039—Switches and Guards. Newly released 32 page, two-color Catalog No. 49, of the McGill Manufacturing Co., Inc., Valparaiso, Ind., contains complete descriptions of Leveler switches, McGill lamp guards, and McGill electrical specialties.

1041—Cabinets and Boxes. Thirty pages of catalog sheets comprise a new catalog available from B & C Metal Stamping Co., P. O. Box 56, Station D, Atlanta, Ga. The catalog is divided into three sections: products for electrical applications in general, products for the utilities and the R.E.A. and products for appliance distribution.

1045—Church Lighting. The Edwin F. Guth Co., 2615 Washington Ave., St. Louis 3, Mo., has released a new catalog on Artistic Ecclesiastical Lighting for Churches. This new catalog illustrates church lighting equipment and lists complete details. Write the Guth Company for a free copy.

1045—Electric Connectors. General Electric Co., Schenectady 5, N. Y., has announced a booklet describing a complete new line of solderless electric connectors which accommodates a wide range of conductor sizes. The new line is completely illustrated and diagrammed. This booklet is available from the Apparatus Dept., General Electric, in Schenectady.

1051—Air-Cooled Transformer. Bulletin No. 40-ACO is now available from Marcus Transformer Co., Inc., 34 Montgomery St., Hillside 5, N. J., giving descriptive details on the company's new air-cooled distribution transformer. Designed for indoor or outdoor use, the new transformer utilizes heatproof class B and C insulation which enables it to withstand overloads and eliminates the use of oil or other liquids.

1053—Busbribution Duct. This 23 page bulletin, No. 462, issued by Bullding Electric Products Co., Box 177, Detroit 32, Mich., describes in detail the Bullding Feeder and Plug-In Busbribution Duct for bus duct electrical distribution. The bulletin is profusely illustrated. The many drawings included show details of the duct, the various fittings, and the hangers as well as diagrams of complete systems.

1063—"CSP" Transformers. Forty pages of facts and figures, dates and places on "CSP" transformers in actual use comprise the booklet B-4248, "50 Case Histories of "CSP" Performance," issued by Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa. The booklet covers three basic types of case histories—lightning protection, thermal protection, and lower cost.

1071—Plugs and Receptacles. Additional loose-leaf sheets for insertion in the Pelco Catalog 1100 are available from the Pelco National Co., Chicago 51, Ill. These pages describe a wide range of plugs and receptacles for special purposes.

1073—Lightning Protection. Complete with graphs, diagrams and illustrations, "Modern Concepts of Lightning Protection for Transmission and Distribution Systems," by H. M. Towne, is available from the Apparatus Dept., General Electric Co., Schenectady, N. Y.

1075—Switchgear Equipment. A 24 page revised bulletin, GET-1293A, "The Purpose and Use of Electrical Diagrams Supplied with G. E. Switchgear Equipment," is available from the Apparatus News Bureau, General Electric, Schenectady 5, N. Y. The bulletin constitutes a practical guide for those who install, operate or maintain switchgear.

1079—Connectors. A 24 page, three color catalog describing K & H solderless terminal lugs and connectors may be obtained from Krueger & Hudepohl, 5 East Third St., Cincinnati 2, Ohio. A wealth of information, including specifications, descriptive material and illustrations are included.

1081—Busduct Data. Various applications of the FA busduct for industrial purposes are illustrated in this 31-page bulletin made available by the Frank Adams Electric Co., St. Louis, Mo.

1083—Fastening Devices. An illustrated bulletin of electrical fastening devices for E.M.T., Armored, and Non-Metallic Sheathed Cable, featuring the popular No. 7491 SHERCO Staple is now available from the Sherman Manufacturing Co., Inc., St. Louis 13, Missouri.

1085—Lighting Fixtures. Eastern presents their most complete catalog, 32 pages of engineered lighting data, including a variety of fixtures for all architectural, commercial and industrial applications. Eastern Fixture Co., Inc., 70 Vernon St., Boston 20, Mass.

1087—Connectors and Fittings. The M. & W. Electric Mfg. Company, Inc., East Palestine, Ohio, announces a new twenty-four page catalog covering Service Entrance Cable Fittings, Ground Clamps, Ground Rods, BX and Romex Connectors, Staples, Conduit Fittings, Wireholders, Insulator Supports, Cable Racks and Wire-form Motor Protectors.

1089—Conduit Fittings. Crouse Electric Company, R.K.O. Building, New York City, has available an eight section catalog covering a full line of malleable iron hot dipped conduit bodies, all types of connectors, ground fittings and service entrance equipment.

1091—Electrical Wiring Devices. A 76 page catalog, No. 45, of electrical wiring devices, covering fluorescent devices, lamp holders, connecting devices, flush plates, flush and surface switches, mating outlets, secondary circuit breakers and interchangeable unit devices. Also included are suggested standards of adequate residential wiring and electrical symbols. This catalog is available from The Bryant Electric Company, Bridgeport 2, Conn.

1093—Magnetic Motor Starters. A new 32 page booklet (Catalog No. 6300—AIA file No. 3D-33) issued by the Monitor Controller Company, 51 Hayward Street, Boston, Mass., describes in detail the Company's A-type starters and explains the protection inherent in the patented Compensated Thermal overload.

1095—Electrical Specialties. The E. D. Kues Mfg. Company, Beatrice, Neb., has available upon request, a 20 page catalog illustrating various types of enclosures and other electrical specialties manufactured. This 76-year old firm supplies the better known utilities and industry throughout North America.

1097—Flexible Cords and Cord Sets. A complete 9 page catalog is available from Cornish Wire Company, 15 Park Row, New York 7, N. Y., containing data on all standard electric cords in stock cord sets, including Neoprene jacketed. Also descriptive data on the new UL approved all Neoprene heater cord—"COROPREX".

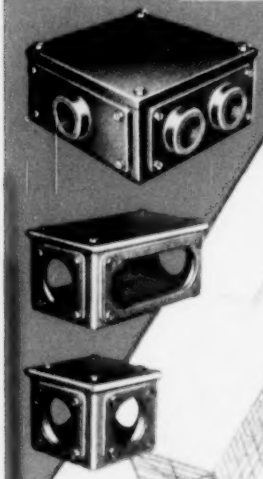
1099—Lighting Fixtures. Fluorescent and incandescent luminaires for schools, offices, stores and churches are illustrated in a series of bulletins issued by Curtis Lighting, Inc., 6135 West 65th Street, Chicago 38, Ill. The entire series or any individual bulletins may be obtained upon request.

1101—Lighting Products. Catalog No. 50 special announcement is made by Boston Lighting Products Corporation, 615 No. Aberdeen St., Chicago 622, Ill., of another issued No. 50 page book of real dollar value merchandise. A real profit maker.

1103—Electrical Connectors. Burndy Industrial Catalog 52, featuring a complete line of general purpose connectors for industrial wiring is available. Complete information concerning applications, construction features and diagrams of these connectors are included, as well as several pages devoted to engineering data. Published by Burndy Engineering Co., Inc., 107 Buckner Blvd., New York 54, N. Y.

1105—SnapX Connectors. A new folder on SnapX connectors is now available from Burgess Method Fuse Co., Galva, Ill. Illustrated and explained are the three steps necessary for connecting cables to boxes with this new connector for armored and non-metallic cable.

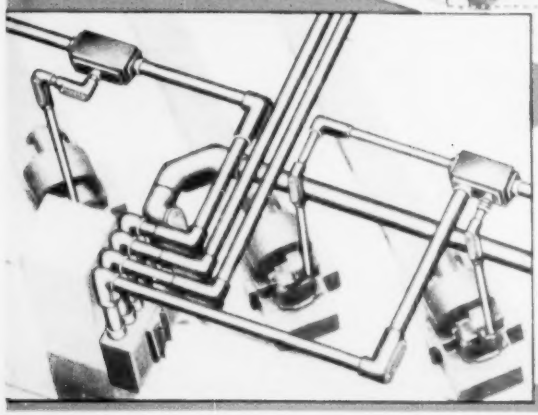
for MODERN WIRING... the conduit and CONDULET*



RS Series Junction Condulets take detachable hub plates with 1, 2, or 3 hubs for conduit from ½" to 3½"

THE "NEW LOOK" IN CONDULET INSTALLATION

A model of a screw machine department with a modern layout of cast Feraloy Condulets and rigid conduit. It has flexibility plus all the other Condulet advantages. The actual installation has been in service for several years and is highly satisfactory.

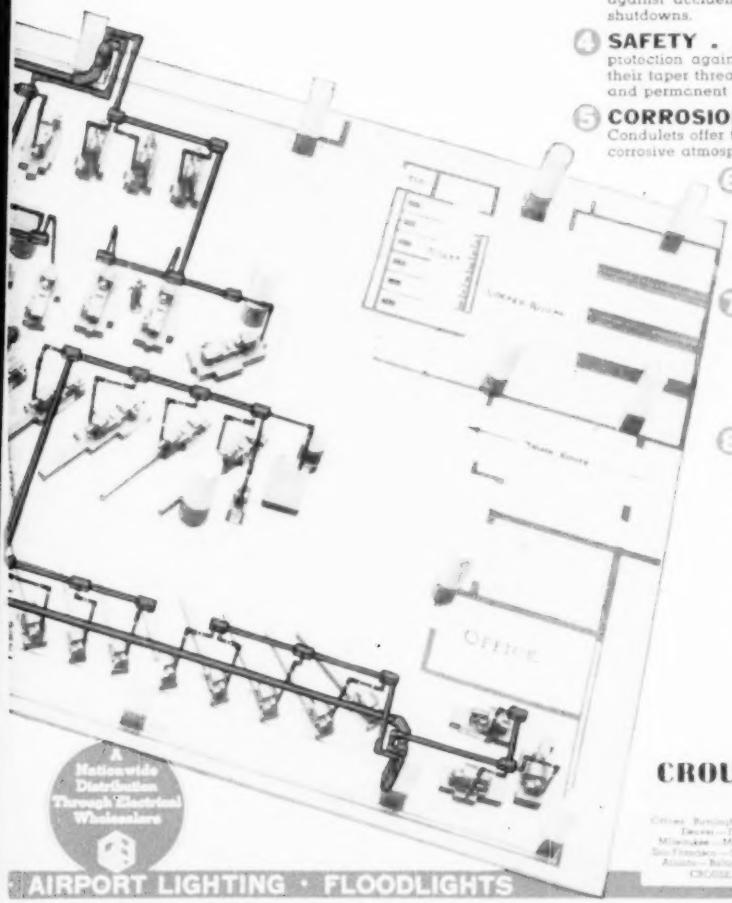


Enlarged view, showing how Type RSM Condulets provide for easy expansion . . . branch circuits can be added at any time. Simply replace a blank plate with a plate that has the required number and size of hubs.

CONDULETS • TRAFFIC SIGNALS •

method gives YOU definite advantages!

NEW ways of using the familiar Condulet and conduit material have produced outstanding results. Modern installation layouts meet industry's modern needs for flexibility while retaining the enduring protection and safety that can only be given by cast Feraloy Condulets and rigid conduit.



1. **FLEXIBILITY . . .** A modern Condulet installation, like the one illustrated below, provides for the vigorous growth and changing conditions of a modern industry. The RS Series Condulets with their detachable hub plates make it easy to change circuits or add additional circuits at any time.

2. **UNIVERSAL APPLICATION . . .** Galvanized Condulets and galvanized rigid conduit may be used under all atmospheric conditions and occupancies.

3. **MECHANICAL PROTECTION . . .** Cast Feraloy Condulets and rigid conduit provide the best possible protection against accidental damage to the wiring — prevents costly shutdowns.

4. **SAFETY . . .** A Condulet installation gives maximum protection against personal injury and fires. Condulets with their taper threaded hubs and rigid conduit provide a reliable and permanent low resistance path to ground.

5. **CORROSION RESISTING . . .** Cast Feraloy Condulets offer the best protection wherever moisture, dust or corrosive atmospheres are present.

6. **ECONOMY . . .** Direct comparison of Condulet and rigid circuit installations with other wiring methods show comparable installed costs. The durability, safety, and low maintenance cost of Condulet installations produces savings which pay dividends over the years.

7. **QUALITY . . .** All Condulets are built to Crouse-Hinds' high standard of quality with painstaking care by skilled craftsmen. Thousands of Condulet installations that are still in active service after twenty, thirty, forty or more years offer positive proof that the trademark CONDULET stands for reliability and long life.

8. **VARIETY . . .** Thousands of types and sizes of Condulets, plugs and receptacles, and lighting fixtures are listed in the Condulet Catalog, including a complete explosion-proof and dust-tight line for use in hazardous locations. There is a Condulet for every purpose.

On your next electrical layout, whether modernization or new construction, plan to get all of the benefits of sturdy cast Feraloy Condulets and rigid conduit. Send for additional information on modern Condulet installation.

*CONDULET is a coined word registered in the U. S. Patent Office. It designates a product made only by the Crouse-Hinds Company.

A Nationwide Distribution Through Electrical Wholesalers

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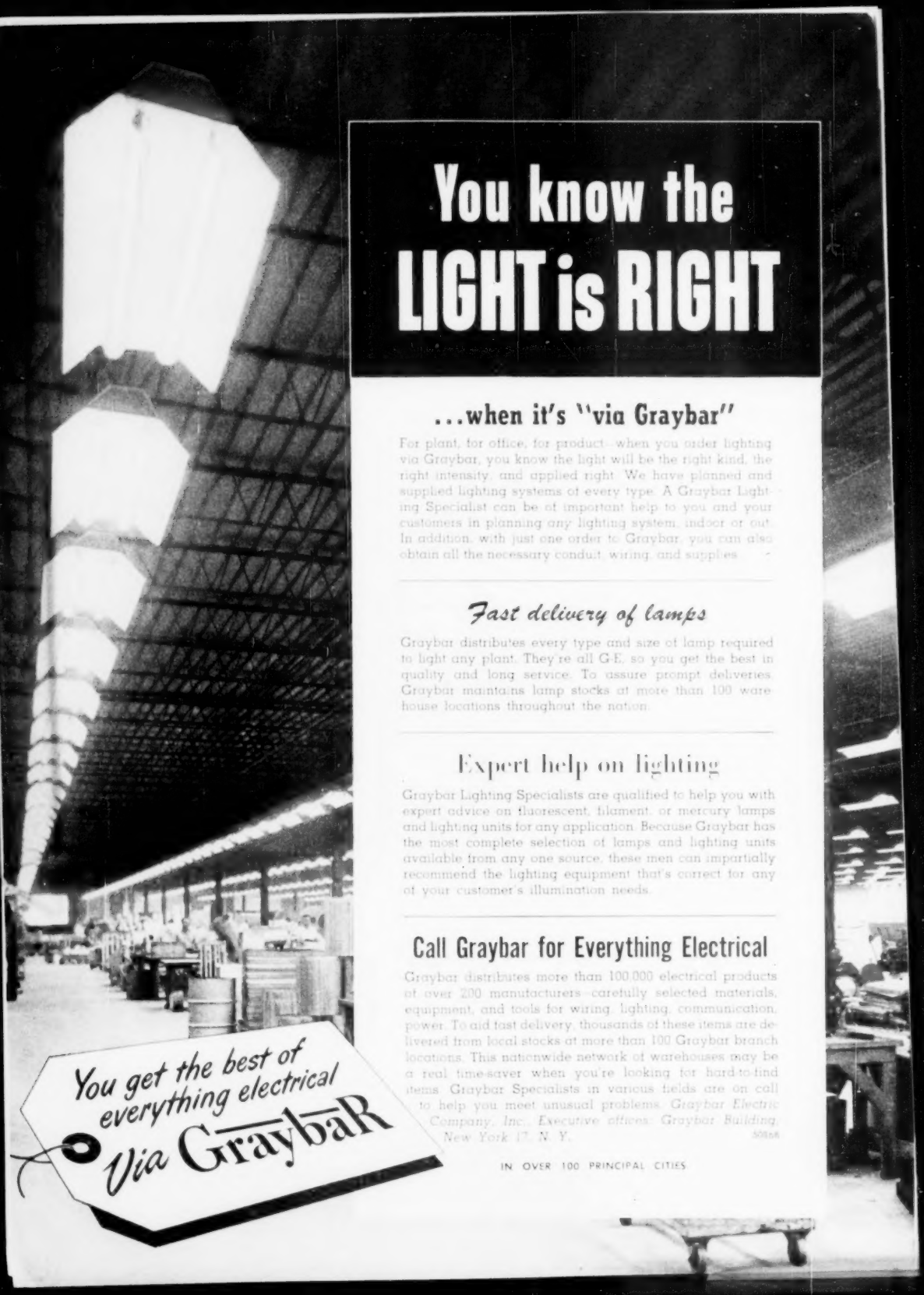
CROUSE-HINDS COMPANY OF CANADA, LTD., TORONTO, ONT.

AIRPORT LIGHTING · FLOODLIGHTS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...when it's "via Graybar"
For plant, for office, for product—when you order lighting via Graybar, you know the light will be the right kind, the right intensity, and applied right. We have planned and supplied lighting systems of every type. A Graybar Lighting Specialist can be of important help to you and your customers in planning *any* lighting system, indoor or out. In addition, with just one order to Graybar, you can also obtain all the necessary conduit, wiring, and supplies.
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Check YOUR NEED...

WE'LL SHIP...WITH SPEED!

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Sizes 4 ga. to 2,000,000 cir. mils.

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—Bare and weatherproof. Sizes 14 ga. to 2,000,000 cir. mils.

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All grades, sizes and construction —in coils or reels.

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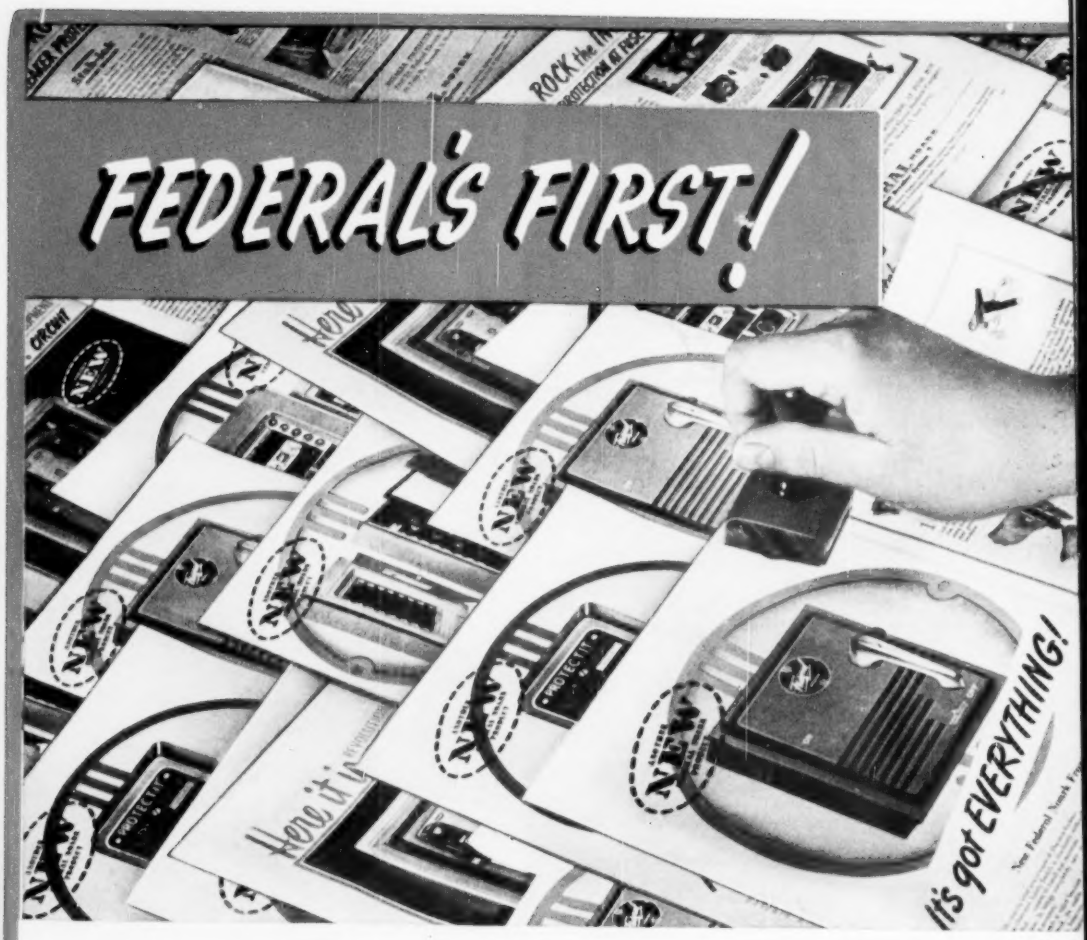
Southern Electrical Corporation

CHATTANOOGA, TENNESSEE



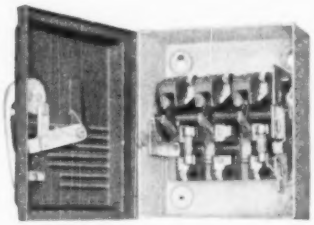
and here are the reasons why!

IN THE LAST 18 MONTHS, Federal Noark has led the field in introducing new and greatly superior devices in every line of low voltage distribution equipment. Today, the broad scope and outstanding advantages of the Federal Noark lines give you the exact equipment you need for every job... bring you maximum savings of time and money.

Many of these new developments simplify your wiring jobs, too, and reduce your installed costs. And Federal's constant testing and rigid quality control assure absolutely dependable, precision devices, always.

Check into the complete lines of Federal Noark equipment at your nearby Federal Distributor. You'll quickly see why Federal leadership with new product after new product spells top savings and bigger profits for you.

FOR EXAMPLE LOOK AT THESE NEW FEDERAL NOARK SAFETY SWITCH FEATURES!



"Type A" Front-Operated Safety Switch

SAFEST, COOLEST OPERATION

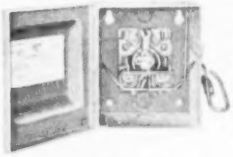
Federal Noark's new line of "Type A" Front-Operated Safety Switches is by far the safest and coolest in operation . . . gives longest, most dependable service life. They're also the easiest switches to install and maintain . . . have guaranteed current break . . . new patented high-pressure fuse holders . . . only two points per pole, both of them held under tremendous tension. 30, 60, 100 amp. switches available now.

GUARANTEED CURRENT BREAK

"Type C" Front-Operated Safety Switch

Federal Noark new "Type C" Front-Operated Safety Switches have practically all of the advantages of the "Type A" Switch. Only two points per pole . . . new patented high-pressure fuse holder . . . cross-bar underneath the switchblades which *always* forces switch open . . . visible blade construction . . . smooth mechanical operation. Available in 30, 60, 100 amps.

VISIBLE KNIFE BLADES



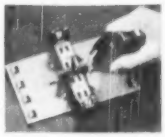
30 Ampere Open Knifeblade "Type D" Switch

With this new Federal Noark "Type D" Safety Switch you can *see* the blade action. This 30 ampere switch is available in either 1 or 2 pole with solid neutrals. In both, the exact position of the blades can be determined at a glance . . . a feature that has long been desired by the trade. The new "Type D" also provides ample wiring space. Two pole switches are quick-break, both blades breaking simultaneously.

STAB-LOK
Catalog No. 112S

STAB-LOKS "DOUBLE" AS SAFETY SWITCHES

The new Federal Noark STAB-LOK Circuit Breaker functions as a safety switch and, at the same time, provides today's simplest, safest circuit protection . . . *all at fuse box prices.* STAB-LOK Circuit Breakers come in ratings equivalent to 60 amp. fusible switches. Single and simultaneous trip double pole STAB-LOK Breakers available in 15, 20, 30, 40, and 50 amperes as required.



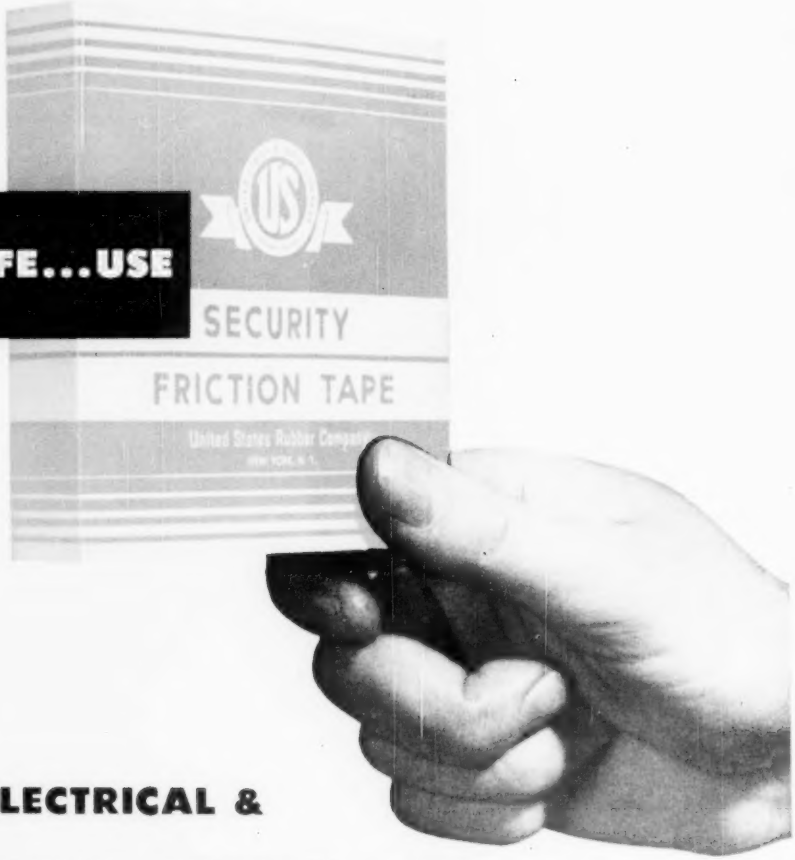
SEND FOR A COPY OF OUR NEW PRODUCTS BULLETIN.

FEDERAL NOARK

Safety Switches

FEDERAL ELECTRIC PRODUCTS COMPANY, 50 PARIS ST., NEWARK 5, N. J.

Complete line of Federal Electric Products includes: Motor Controls, Safety Switches, Service Equipment, Circuit Breakers, Panelboards, Switchboards, Control Centers, Bus Duct ★ Sales Offices in principal cities.



PLAY SAFE...USE

FOR ELECTRICAL &

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● Security Tape will never let you down. Its adhesive compound is not just sticky, but strong and rubbery. To handle tougher jobs, the fabric is unusually high in tensile strength. Security has no pinholes to cause leaks. Straight-tearing, non-ravelling.

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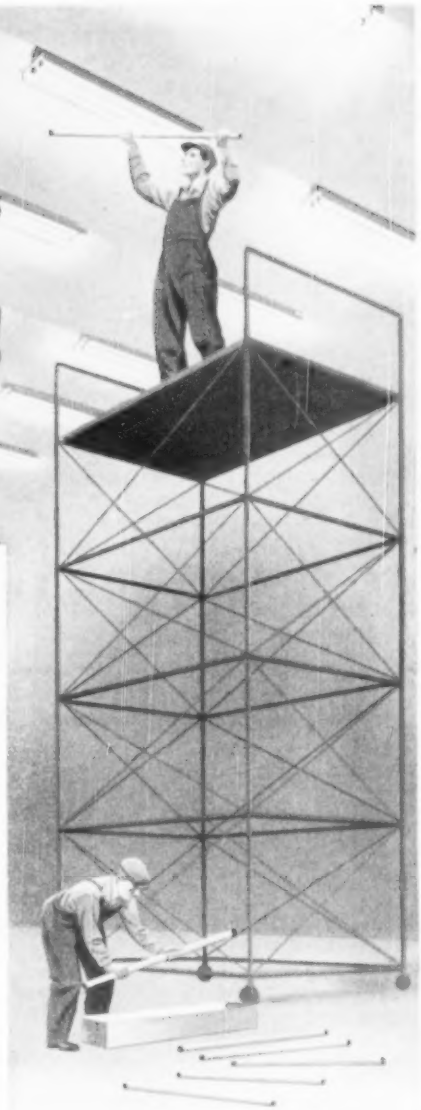
HOW TO GET 1,000 HOURS MORE LIFE FROM A Fluorescent lamp!

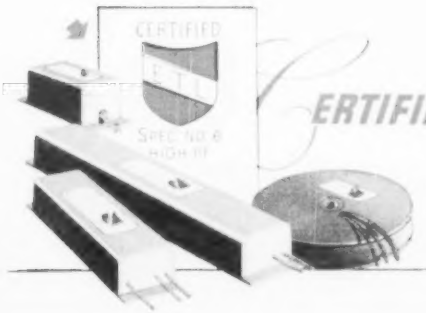


THE life of 40-watt fluorescent lamps can be shortened as much as 1,000 hours by improperly designed ballasts.

You can avoid this costly loss . . . save on lamp replacement and maintenance . . . by specifying the ballasts that assure you full rated lamp life . . . CERTIFIED BALLASTS!

CERTIFIED BALLASTS are made to exacting specifications, then tested, checked and certified by an impartial authority, Electrical Testing Laboratories, Inc.

Up to the minute information on the types of CERTIFIED BALLASTS available from each participating manufacturer may be obtained from Electrical Testing Laboratories, Inc., 79th St. and East End Ave., New York, New York.



CERTIFIED BALLAST MANUFACTURERS

Makers of Certified Ballasts for Fluorescent Lighting

2116 KEITH BLDG., CLEVELAND 15, OHIO

"I wasn't asleep," said the Dormouse

EVERY boy and girl knows the drowsy Dormouse of Alice in Wonderland. He was elbowed and pinched by the Mad Hatter and the March Hare as he mumbled in his sleep at the tea party.

But our young people aren't so well versed in everyday economics. They have a sadly distorted picture of the profits of business. They don't realize why profits are necessary, how small they are, or how they are divided.

For instance, in a recent survey of high school seniors, it was discovered that they believe over 50% of the sales dollar is profit and they think stockholders receive 24% of it. Actually business profit averages less than 8%, with less than 3% distributed as dividends. Business uses most of its profit, moderate as it is, for new plant and equipment, to improve products and to make more jobs.

Misconceptions among our youth bode ill for America's future. They open the door for too ready acceptance of dangerous isms and false foreign philosophies. Such misunderstanding of economics can be corrected only with facts supplied by business itself. You as a leader in your community must share this responsibility.

The American business man must not allow himself to be cast in the role of the Dormouse, pinched and pilloried by the March Hares of communism and the Mad Hatters of the "everything for nothing" state.

The Youngstown Sheet and Tube Company

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MANUFACTURERS OF CARBON, ALLOY AND YOLOY STEELS

ELECTROLYTIC TIN PLATE - COKE TIN PLATE - WIRE - COLD FINISHED CARBON AND ALLOY BARS - PIPE AND TUBULAR PRODUCTS - CONDUIT - RODS - SHEETS - PLATES - BARS - RAILROAD TRACK SPIKES.

APPLETON PLUG AND RECEPTACLE
STYLE 1

APPLETON

Circuit Breaking

Plugs and Receptacles

30, 60 OR 100 AMPERE CAPACITIES • 250 V. D. C., 600 V. A. C.

Durability . . . ease of wiring . . . complete safety! You get all three with Appleton Circuit Breaking Plugs and Receptacles!

Cadmium-plated Malleable Iron Junction boxes and highest quality die cast aluminum housings on both plugs and receptacles guard this equipment against the hard knocks of severe service conditions. Complete terminal units equipped with solderless connectors in both plugs and receptacles assure fast, easy wiring.

Receptacle housings are available in four styles —Dust-proof lift-cover, threaded with cap, or threaded without cap, and plain. Plugs available with or without clamping ring.

This equipment can be used for reversed service by installing terminal units in opposite housings.

APPLETON ELECTRIC PRODUCTS

Sold Through Electrical Wholesalers

6 IMPORTANT FEATURES!

1. Path of grounding circuit through plug sleeve and receptacle housing.
2. Complete terminal units in both receptacle and plug are removed for wiring by loosening 2 screws on either side of receptacle or plug housing.
3. Circuit wires may be installed easily to solderless terminals.
4. Phosphor Bronze springs in plug and receptacle insure grounding before poles complete circuit. (In Style 2, grounding pole is made longer so that grounding circuit is made first, broken last.)
5. Gasket on clamping nut assures vaportight seal between plug and receptacle.
6. Concealed cord clamp with rubber bushing grips cable securely, making plug vaportight. Smooth, easy-to-handle aluminum cap covers complete clamping unit.

Appleton Plugs and Receptacles are made in two styles. Style 1 (as illustrated) is designed for use in installations where corrosion is not excessive and where the plug sleeve and the receptacle housing may serve as a safety circuit.

Style 2 grounding is made through extra pole in Plug and Receptacle. This style is recommended where excessive corrosion exists. Grounding pole is made longer so that grounding contact is made first and broken last.

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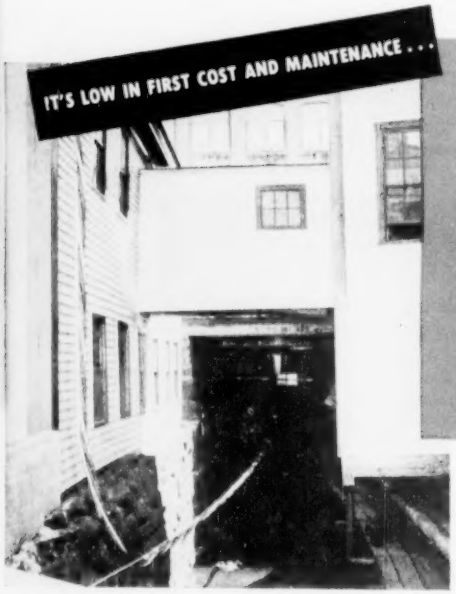
APPLETON

CONDUIT FITTINGS • LIGHTING EQUIPMENT • OUTLET AND SWITCH BOXES • EXPLOSION-PROOF FITTINGS • REELITES

Pre-assembled cable, messenger and binder construction goes up fast and easy — all in one operation. No special equipment or technique is required. Important time and installation costs are saved.

Full support between points of suspension is provided by a Copperweld messenger, bound to the cable by a spirally wound metallic tape. This simple *all-in-one construction* (cable, messenger, binder) results in a compact cable design that requires little space, makes a neat appearing installation.



Installation economies provided by Hazard Self-Supporting Cable design reduce your first costs. And once up, little or no maintenance is required. Lasting protection against the toughest weather, tree branches, sun, oil, moisture, etc., is provided by the exceptional mechanical strength of the cable design, the well known, tough characteristics of a Hazaprene (neoprene compound developed by Hazard) Sheath, and the long-aging, moisture resistant qualities of Hazard Watertite insulation.

Typical of the benefits and advantages gained through the use of Hazard Self-Supporting Aerial Cable is this neat appearing installation at The L. S. Starrett Company, Athol, Mass. More and more industrial plants, as well as utilities are turning to self-supporting cable in answer to today's needs for circuit expansion and modernization. A wide variety of cable designs meets all types of service requirements.

It will pay you to write for full information about the advantages of Hazard Self-Supporting Aerial Cable or ask your Hazard representative. Hazard Insulated Wire Works, Division of The Okonite Company, Wilkes-Barre, Pennsylvania.

HAZARD insulated wires and cables for every electrical use

R375

ELECTRO cuts 1 man out of 2 from your installation picture!

- Exclusively ELECTRO'S . . . the patented ONE-MAN SPEEDY HANGER
- Enables 1 man to install ELECTRO flourescent luminaires
- Saves thousands of costly man hours
- Simple and positive in operation
- Drastically reduced maintenance costs

Discover this new, proven way to reduce your installation man hours 50%. Specify your choice of ELECTRO COMMERCIAL flourescent fixtures. All are adapted to ELECTRO'S cost-saving "one-man" SPEEDY HANGER—at no extra cost to you!

3 EASY STEPS

STEP 1

Attach Speedy Hanger to outlet box for surface mounting . . . or twin stem set for pendant mounting. Remove knockouts; pull wire leads through.

STEP 2

Hook fixture suspension clips on to tabs on Speedy Hanger, and make wire splice.

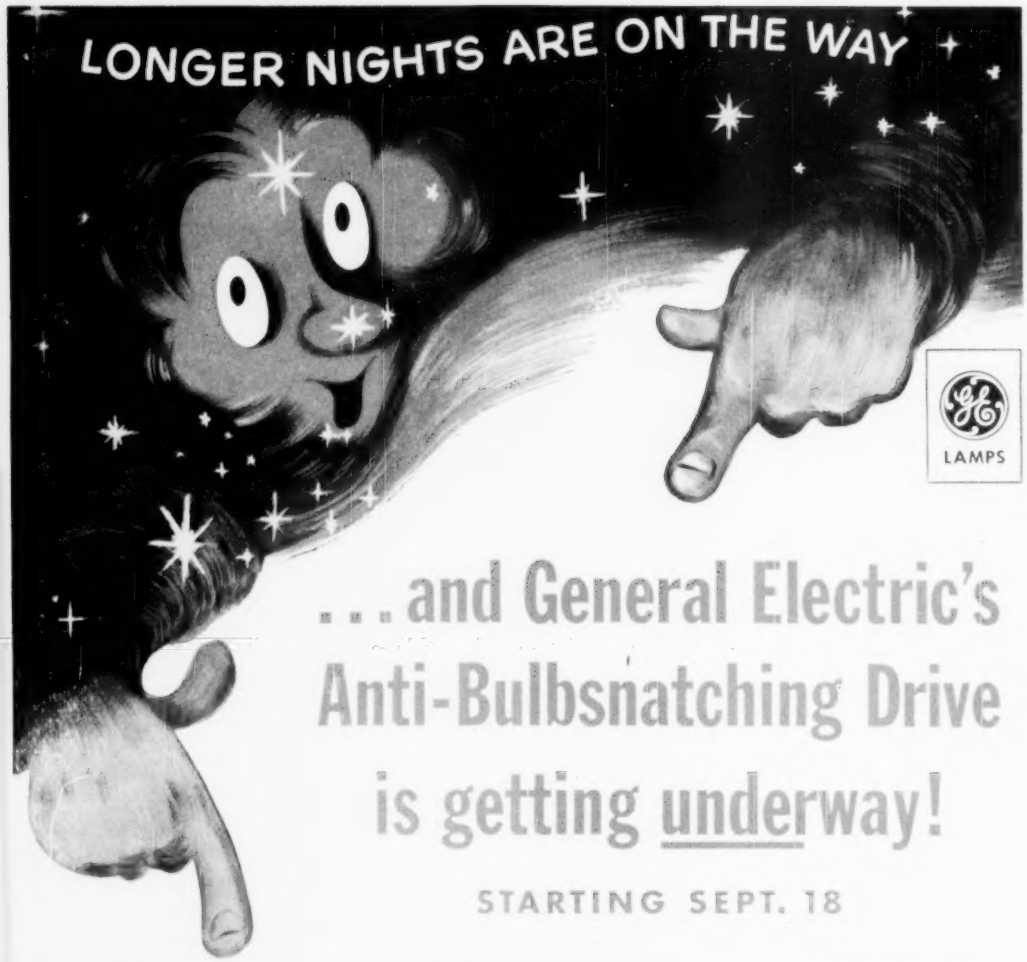
STEP 3

Depress spring-tension pins and roll fixture into Speedy Hanger slots. Lift fixture into position. Attach 2 wing nuts.

—THAT'S ALL!

ELECTRO MANUFACTURING CORPORATION

2000 W. Fulton St. • Chicago 12



...and General Electric's Anti-Bulbsnatching Drive is getting underway!

STARTING SEPT. 18

CASH IN ON THIS SALES IDEA!

General Electric's Anti-Bulbsnatching Drive is timed for the peak of the lamp buying season—right when the nights are getting longer. It features the greatest lamp-selling idea ever—*bulbsnatching*—General Electric's famous name for robbing one light socket to fill another!

CASH IN ON THIS ADVERTISING!

Customers will see and hear about the Anti-Bulbsnatching Drive again and again. Full color ads in Post, Life, Look, and Sunday newspaper supplements. Ad messages on spot radio and the Fred Waring Television Show. All will work to bring customers into your store.

CASH IN ON THESE DISPLAYS!

Colorful counter cards, streamer, carton tack-ups, special price cards—use 'em and watch sales zoom during this Anti-Bulbsnatching Drive. Display plenty of G-E 2-lamp packages, too, because now more than ever . . .

G-E LAMPS SELL ON SIGHT!

GENERAL ELECTRIC

An Announcement of Importance to The Electrical Industry

UNDERWRITERS' APPROVE TRIANGLE "DUAL-RATED" WIRE for RH OR RW APPLICATIONS

IT'S "DUAL-RATED" One wire — two purposes
Reduce inventory headaches — specify "Dual-Rated" wire.

In a move of prime importance to the electrical industry, Underwriters' Laboratories, Inc., has issued an approval for Triangle's "Dual-Rated" Wire as Type RH or Type RW. This means that "Dual-Rated" wire is suitable for use as Type RH at 75°C. in dry locations or Type RW at 60°C. in wet locations.

"Dual-Rated", available in sizes #14 to 1,000,000 CM, is a superior quality general purpose wire, having the following outstanding properties: extreme moisture resistance, excellent heat resistance, exceptionally long life. In sizes #14 through #6, "Dual-Rated" incorporates Triangle's famous Glazon cover. When buying wire for hot or moist locations, reduce your inventory headaches — specify Triangle's "Dual-Rated" wire.

In the long run—you'll save and get it faster—from a Triangle Distributor.

TRIANGLE CONDUIT & CABLE CO., INC.

1906 JERSEY AVENUE • NEW BRUNSWICK, NEW JERSEY
PLANTS: NEW BRUNSWICK, N. J. MOUNDSVILLE, W. VA.

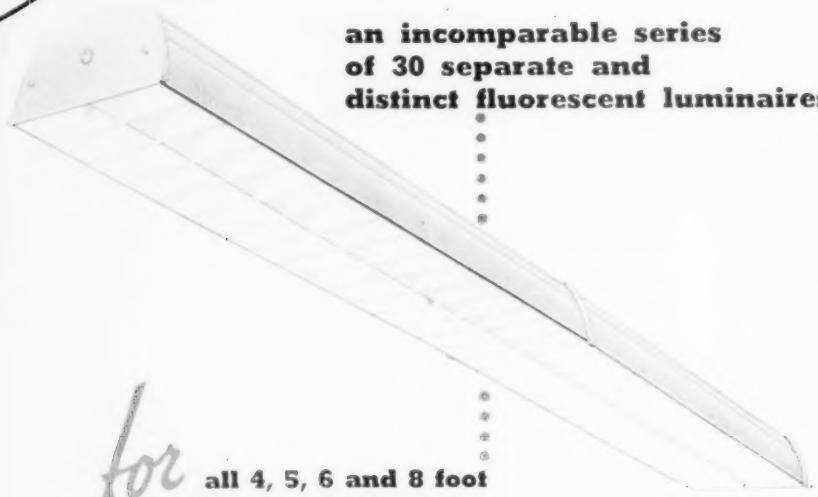
IT *MUST* BE RIGHT!

"GLAZON" BUILDING WIRE • BARE WIRE • ARMORED CABLE • "GLAZON" NON-METALLIC SHEATHED CABLE • SERVICE ENTRANCE, SERVICE DROP, VARNISHED CAMBRIC BRAIDED OR LEADED, TRIOPRENE TRENCH, POWER AND PARKWAY CABLES • RIGID CONDUIT HOT-DIPPED GALVANIZED • ELECTRIC METALLIC THIN WALL CONDUIT • FLEXIBLE STEEL CONDUIT

CORONET

NEW CURTIS

an incomparable series of 30 separate and distinct fluorescent luminaires.



for **all 4, 5, 6 and 8 foot lamps . . . slimline, low-brightness or starter type.**

The new Curtis Coronet Series is designed to provide unexcelled general illumination for all commercial interiors. Eye-comfort, traditional in Curtis lighting units is even more characteristic of this skillfully engineered line. Yes, now Curtis offers not only Quality . . . *but "Quality with Features".*

Shielded 40° crosswise with either 40° or 25° lengthwise shielding . . . *offering the optimum in eye-comfort.*

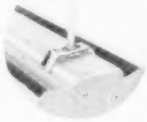
Alzak Aluminum or Baked White "Fluracite" steel reflectors . . . *highest lighting efficiency.*

Newly designed "Tong Hangers" speed and simplify installation . . . *Lower installation cost.*

Fingertip control louver catches permit relamping 32 feet of lamps from one ladder position . . . *lower maintenance cost.*

Bears Electrical Testing Laboratories and Fleur-O-Lier labels . . . *guaranteed performance.*

Curtis Tong Hanger, already mounted, ready to receive wedge-top of luminaire wireway.



Tongs expand when luminaire is pushed upward in one simple motion. Edges of tongs catch under continuous ridge. Luminaire is released, weight pulls tongs together and assures a strong grip.

Simple lock nut above tong hanger is tightened and mounting is complete in a fraction of the time required by conventional methods.

Full technical details and specifications on the Coronet series are illustrated and described in Bulletin A-1. Write today for your copy. Address Dept. C-912.

WITH THE CURTIS PLAN *Plan Lighting*

CURTIS

LIGHTING, INC.

6135 W. 65th ST., CHICAGO 38, ILLINOIS

QUALITY WITH FEATURES

CRITICAL HOME-FRONT CAMPAIGN

No. 5 in a series of editorial messages

ALMOST as alarming as the prospect of another world war is the possibility that further drastic inflation may result from our new military preparedness program.

Yet, this program itself is not directly responsible for the present threat of shortages and price advances. Rather, it is the wave of hysterical civilian buying, starting in mid-summer, which swamped the markets and pushed up prices. Some speculative buying to build up retail and wholesale stocks may have been a contributing factor. And a noticeable tendency to announce factory price advances based on "increased cost of materials" undoubtedly helped kindle feverish buying impulses.

This situation is not justified by the preparedness program. Present military requirements are imposing no greater demands on our economic machine than it should be able to take care of without undue strain—provided civilian buying hysteria is curbed.

We are still far from the all-out mobilization of World War II when military needs took about half of our total national production. As this is written, our rearmament program will take no more than ten per cent of our output—and that will leave a lot of materials and manufacturing facilities for turning out automobiles, household appliances, lumber, tools, hardware and other needed products.

Instead of using scare advertising or sales suggestions, business men should acquaint their customers with the facts, should discourage panicky buying. And in so doing they will help to ward off stringent government controls.

As an example, following is part of a letter sent in August by the president of one of the South's largest wholesale houses to his salesmen:

"There seems to be quite a mass hysteria about shortages and higher prices which could bring on price control and rationing. Fortunately, it seems this hysteria is lessening as people regain their balance from the first shock.

"We don't want to be a party to this fanning of the flames of inflation, and we don't want any of our salesmen to be a party to it. Under no circumstances are you to solicit business by yelling 'shortages' or 'higher prices'. We are resisting to the fullest any increase in the prices of the things we buy and sell, and in some cases we have had favorable results.

"In no case will we advance the price of our goods unless our supplier has advanced the price.

"Dealers can have a profound influence on their customers, the consuming public, by speaking common-sense language when they rush in to stock up. If a customer wants to speculate by buying two or three of an item, he can suggest that he buy a half-dozen, as he has plenty in stock. This will delay an O.P.A. and rationing. Preach it; work for sanity, not hysteria," he suggested.

The job demands team work.

Business men will be performing a public service and also working in their own best interests by doing everything possible to hold down prices and prevent panicky buying. But to win the battle against inflation they need the help of their government.

The one factor above all others which leads to widespread fear of drastic inflation is the apparent absence of any serious thought of putting the government's own financial house in order.

The individual citizen will have to economize in order to pay the increased taxes which will now be required. But if he cuts down on his spending for non-essentials, is he not justified in expecting Uncle Sam to do the same thing?

There is, for instance, the little matter of nearly a billion dollars to be appropriated the coming year for "rivers and harbors" — the so-called pork-barrel bill. Can government afford such extravagant spending in these times?

The fight against inflation demands the help of business men. But it also requires the cooperation of government. It's a teamwork job.

TEMPERATURES UP TO 110°!
WINDS UP TO 120 MPH!

TOUGH CONDITIONS FOR TOUGHER CABLES

Rome CONTROL CABLES

You won't find more severe operating conditions than those encountered in the deserts of the Middle East. Blistering sun and violent winds combine forces to attack anything above ground.

That's why a well-known Middle East oil company with the problem of a sensitive, long-distant, remote control operation specified Rome Control Cable for the job. Long-time stability of electrical characteristics, sensitivity of operation, resistance to extreme weather were essential. The installation involved both aerial and direct earth burial circuits, especially designed for matched performance. Selection of Rome Control Cable for such rigorous service was no accident! It resulted from Rome's ability, through competent engineering and research, to design the *right cable for the job* and manufacturing facilities to produce it.

The permanent dependability of Rome control and signal cables assures years of efficient, trouble-free service for vital control functions. Control circuit failures are eliminated. If you have a difficult control cable problem, let Rome solve it for you. The coupon below will bring you specifications and test data. Mail it today.

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Please send copy of new Rome Power and Control Cable Catalog.

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From Bar to Finished Wire

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OUR READERS SAY—

Readers are invited to make use of these pages to express their own views on timely subjects.

Help Wanted on Credit Problem

◆ A REGULAR reader of ELECTRICAL SOUTH for many years, I have obtained much good information from the wide variety of articles published on various phases of the electrical industry.

As a contractor in a comparatively small town, I would like to know how other contractors in communities about this size handle their credit problems with their customers. Where you know almost everybody, you'll lose business if you don't grant credit, and a lot of times the ones who owe you stay away and give their new business to someone else.

While the tried and true method of being "hard" about granting credit may serve to eliminate some credit losses, it will also give the firm a "hard" reputation that may lose it some good business.

I would appreciate it if readers would send in some of their credit experiences, and if you could see your way to publish some articles showing the small contractor how to best handle credit in a diplomatic and business-building manner. —**Buford Martin, owner, Dyer Electric Company, Dyersburg, Tenn.**

More Qualified Inspectors Needed

◆ BECAUSE I feel that ELECTRICAL SOUTH has enough impact upon its readers in the South and Southwest, I should like to see a good, strong article or two published in regard to the qualifications of the city electrical inspector who passes on contracting jobs.

In several cities that I know about, the City Electrical Inspector is not qualified to inspect jobs that include substandard work and materials. Often such contracts were secured through a low bid that underbid contractors who do only legitimate jobs, and make their bids on that basis.

Contractors whose bids on industrial jobs cover good work and materials are under a decided disadvantage if they must compete with low bidders who get away with substandard work and materials because a city inspector does not have adequate training.

The only solution that I can offer is for local chapters of the National Electrical Contractors Association to use their influence to oust an unqualified city inspector who does not know enough to reject substandard work.

An occasional article in ELECTRICAL SOUTH on this vital subject might result in qualified men being appointed to the important office of city electrical inspector. —**Jack Ketzscher, North Little Rock Electric Co., N. Little Rock, Ark.**

Likes Editorial

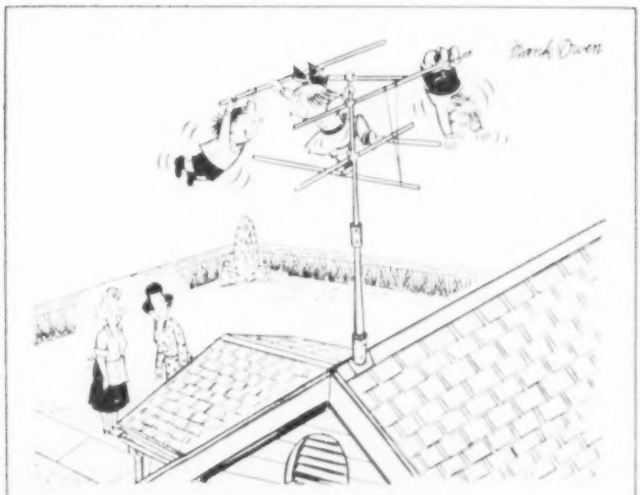
◆ I can't resist complimenting you folks on that splendid editorial in ELECTRICAL SOUTH for August entitled "Uncle Sam—Business Competitor."

It certainly hits a lot of nails on the head. It's a honey!—**Ashton B. Collins, Reddy Kilowatt, New York City.**

Adequate Wiring—Everybody's Job

◆ WE APPRECIATE the articles we read in ELECTRICAL SOUTH and particularly your constant campaign for adequate wiring.

There is one point that some contractors seem to overlook when figuring new jobs, and that is that there never will be wiring that is adequate enough for the future. Every day new electrical appliances and equipment are produced that are designed to increase comfort and good living and these have to go on the lines.



"I've never seen anyone enjoy television as much as our children do!"

Wheeler Textilume

. . . the textile lighting fixture that withstands the most severe moisture and humidity conditions.

- Hinged type glass covers which effectively protect reflecting surfaces against the entrance of dirt and moisture are available for quick and easy attachment to Textilume Fixtures.

- One-piece, all-welded steel body — completely sealed in seamless vitreous porcelain enamel.
- *Non-corroding* — no cracks or crevices, moisture cannot collect and cause rust.
- Operating equipment easily accessible — mounted on easily removable wiring channel.
- *High reflection factor guarantees maximum illumination* — scientifically designed to assure perfect light control.

For complete information write Wheeler Reflector Co.
275 Congress Street, Boston 10, Massachusetts

Wheeler REFLECTORS

Distributed Exclusively Through Electrical Wholesalers

MADE BY SPECIALISTS IN "SKILLED LIGHTING" EQUIPMENT SINCE 1881

Every contractor should be a constant promoter of adequate wiring to all the people with whom he comes in contact. Homes that are adequately wired should be held up as an example to others so they will see the desirability of having adequate wiring in their own homes.

Adequate wiring should not stop at residential applications but should be carried out intensively to the owners of stores, factories, industries and farms.

When appliance dealers and contractors find that the wiring in a place is inadequate to handle the appliance being bought, they should straightway try to sell a complete job of adequate wiring instead of possibly running an extra line to relieve the load until something else is added to the wiring system.

Some appliance salesmen minimize the need for extra wiring for the appliance they are selling for fear this factor will influence the customer against buying the product. They have been known to overfuse to keep the appliance functioning. Most of the time the customer does not realize how dangerous this may become.

The main point I wish to bring out in writing to you is to advocate that all of us in the electrical industry make a practice of selling everybody we know on adequate wiring regardless of where they buy it and to take pride with the owners in all the top flight adequate wiring jobs in the territory served.

Nowadays, people have ambitions to have good homes, good equipment in them, all the modern conveniences, beautiful grounds and shrubbery, and in them they take justifiable pride. They will also take pride in having adequate wiring, if they are reminded why it is so desirable, and why they should be proud of a modern home that is adequately wired—a home electrically safe but also able to handle a man's job of work. Since electricity touches everyone—adequate wiring is everybody's job. **—Dale S. Briggs, Manager, City Electric Company, Blytheville, Ark.**

Flexible Plans For TV Service

◆ THE NEIGHBORHOOD demand for servicing television sets embarked us on drawing up television service contracts a few months ago for residents in this area. Staffed by eight television specialists who give their full time to this service, we operate only within a radius of five miles.

Our service contracts are planned to include labor, or labor and material, or labor and material and picture tube, as selected by the customer from the ten service plans we outlined to keep a set in normal operating condition. Our service contracts are not insurance policies as defined by insurance regulatory laws but were intended to perform specific service as outlined in each contract for a prepaid flat rate.

A set must be in good operating condition upon inspection by our representative before a contract becomes effective. We have worked out ten plans from Plan A which is for three months, covers labor only and set only, is $15 and entitles customer to a maximum of four calls, through Plan J which covers a year of service on a comprehensive 19-inch set, tube, et al, for $70 entitling the customer to a maximum number of 9 calls.

Between Plan A and Plan J lie a series of plans including Plan B for 3 months' service at labor and material, set only, no picture tube, for $25 on any size set with four maximum service calls. Plan C for $35 for 3 months on a comprehensive set, tube et al with maximum of four calls. Plans D and E for 3 months on comprehensive 16-inch and 19-inch sets, and Plan F for one year, labor only, set only, for $30 on any size set, with a maximum of 9 calls.

Antenna lead is also covered for $5 additional on three months' contract or $10 additional on a one year contract.

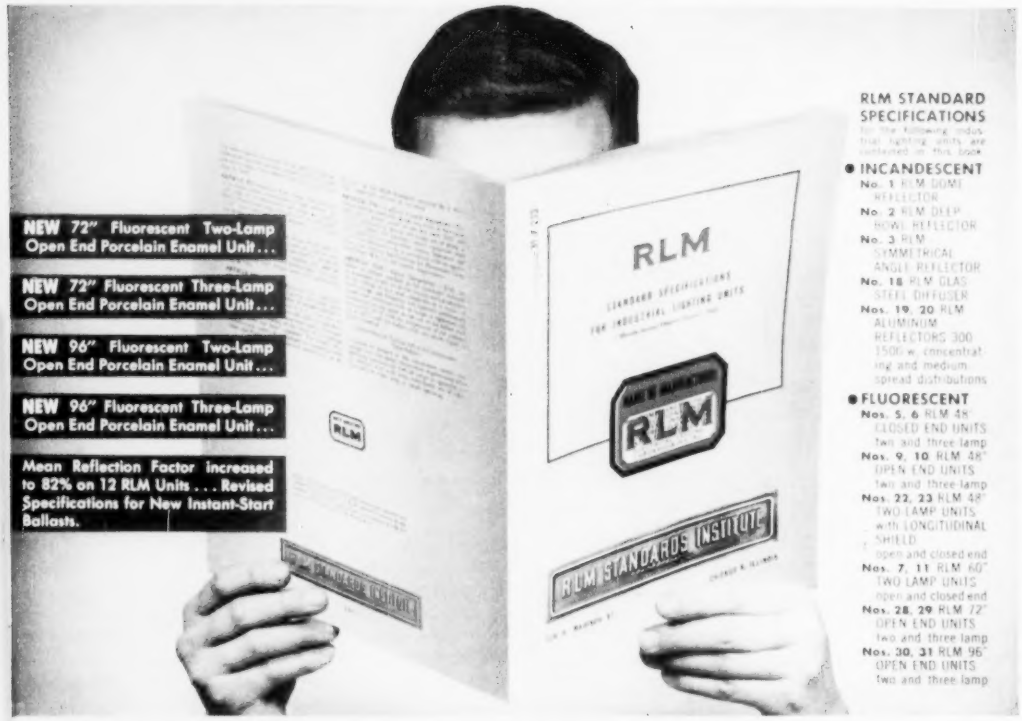
Detachable coupons are collected when our service man calls. Unused coupons can be applied as cash against an additional contract at the rate of $2 each.

The only promotion we gave this TV service was direct mail.

We believe it fills a need by making available a reliable local source of good fast television service on a fixed fee prepaid service contract basis. For the customer, it means he will not have to be dependent on the large downtown shops. — **William E. Yost, Jr., Yost Electronics, Bethesda, Md.**

"We may need that in a hurry someday, Miss Bilk. Make one copy for every drawer in the file cabinet"

4 NEW RLM SPECIFICATIONS AND IMPORTANT REVISIONS



This New, Free Book of RLM Specifications Gives You the Up-To-Date Information Needed for BETTER PLANNED LIGHTING

For Better Planned Lighting, everyone who specifies, recommends, buys or sells industrial lighting equipment needs a copy of this new book, officially revised on March 1, 1950 and just off the press. It contains nineteen officially approved RLM Specifications. This book is a valuable aid in measuring illumination, construction and performance standards which are basic to lighting equipment efficiency, economy and ease of maintenance.

New RLM Slimline Lamp Units Included are 4 important, newly-established RLM Standards (Nos. 28-31) for industrial lighting units, designed to utilize the new, longer-length Slimline Fluorescent Lamps. Equipment conforming to these standards and bearing the RLM Label is now available. The minimum RLM Standards established for these Slimline industrial units are based upon extensive tests which have indicated these standards to be essential to satisfactory, efficient and economical performance.

Higher Reflection Factors Higher reflection-factor specifications for 12 RLM Units are among the important revisions to existing RLM Specifications contained in the new RLM Book. The reflection-factor increase from 79% to 82% brings users greater efficiency and more light for the money, widens opportunities for Better-Planned Lighting, and increases the importance of specifying units bearing the RLM Label. If you specify, recommend, buy or sell industrial lighting equipment, a copy of this new book, "RLM Standard Specifications for Industrial Lighting Units," is available to you without cost or obligation. Write RLM Standards Institute, Inc., Suite 425, 120 W. Madison Street, Chicago 6, Illinois.

RLM STANDARDS INSTITUTE

The Trade's RLM stand for Reflector and Lighting Equipment Manufacturers

A Planned Lighting Check Sheet

How Does Your Job Measure Up?

SCORE			CRITERIA
Good	Fair	Questionable	
100	50	0	**Every lighting recommendation should be directly aimed at the single target-objective of providing an effective and economical lighting plan geared directly to the user's present and foreseeable needs. Although no single listing of objective criteria such as this will exactly fit all jobs or suit every individual taste, the use of such a check-sheet can be useful to all parties concerned.**

1. REQUIREMENTS—*Does the prescription fit specific needs?*

a. Were the various functions to be served in the area specifically analyzed to determine the lighting requirements of each—on horizontal, oblique, and vertical surfaces—in terms of I.E.S. recommendations?

b. Were the physical characteristics of the area thoroughly considered—ceiling structural design, height, window areas, adequacy and flexibility of electric service circuits and controls.

c. If for any insurmountable reason, the user cannot make a complete installation initially, does the recommendation provide for a logical step-by-step development toward a well-planned ultimate objective?

2. SOURCE—*Is the light Source best for the work?*

a. Considering the type of activity to be carried on in the area, are the proper daylighting control provisions made and are the proper lamps called for—incandescent, fluorescent or mercury vapor, singly or in combination—and proper consideration given to color qualities?

b. Is the plan best for the user in the matter of such points as first cost of equipment and wiring, energy consumption and cost, color of light, heating effects, lighting and relighting time lag, effects of temperature and humidity, noise level, radio interference?

3. LUMINAIRE—*Is the luminaire best for the job?*

a. Considering the nature of activity to be served, do the selected luminaires give suitable light distribution, proper brightness ratios and contrasts, proper control of specular reflections from possible polished surfaces in the lighted area—according to I.E.S. recommendations?

b. Do the luminaires properly harmonize with the general design and architectural treatment?

4. QUANTITY—*Is the level of illumination correct?*

a. Considering the relative severity and duration of visual tasks to be performed, does the design provide adequate amounts of light in the right places—according to I.E.S. recommendations—for "quick" accurate, and comfortable seeing?

b. Does the design provide adequate flexibility to meet possible changing conditions and requirements?

5. QUALITY—*Is the quality of light right?*

a. Do the layout and the selected equipment assure proper brightness patterns and ratios between visually adjacent surfaces, does it eliminate possible reflected images at point of work as well as to normal direct view of sources? Have I.E.S. recommendations been met?

b. Do they provide suitable brightness ratios between the different architectural surfaces of the lighted area, between work and work surfaces and other room areas, or between displayed merchandise and background?

6. ENVIRONMENT—*Were surroundings considered?*

a. Whether in office, store, school, industry, home, or other service, the provision of adequate footcandles on a specific surface is only a part of the job providing adequate and satisfactory lighting for the user. Does the lighting plan give specific attention to such important matters as proper painting and the use of color for furnishings or equipment as well as for room surfaces?

b. Is the plan appropriate to the characteristics of adjacent areas?

7. MAINTENANCE—*Is easy maintenance provided for?*

a. Do the plans provide for the maintenance program which is an inseparable part of any good lighting installation? Is it realistic from the standpoint of economy, personnel, safety, and human nature?

b. Has the user been specifically advised of the importance of proper maintenance in terms of the lighting results and costs that he can expect?

The Better the Score—The Greater the User's Assurance of Satisfaction.

Why pay more? Why need a poor job?

(Reprinted from the May 1950 issue of ILLUMINATING ENGINEERING by permission of Illuminating Engineering Society)

THE ELEMENTS OF PLANNED LIGHTING

The "Planned Lighting Check Sheet" prepared by the Illuminating Engineering Society, and reproduced on the foregoing page, is a tool that can be used advantageously by all lighting salesmen and engineers. The factors that enter into a planned lighting job are numerous. Some can be measured accurately; others are intangible; but nearly every lighting job involves all of the factors to some degree. If you make lighting recommendations—whether as an electrical contractor or power company salesman—apply this test to your recommendations: Does the prescription fit specific needs? Then check your recommendations point by point to make certain that every factor in a planned lighting installation has been given proper consideration. Brief discussions of each of the elements of a planned lighting job are presented in the following pages by lighting experts well known in the South.

SOURCE

Is the light source best for the work?

by H. M. Horton
District Lighting Engineer
General Electric Co.

◆ THE LIGHTING man's problem of determining which light source is best suited for the work is considerably more complex than it was during the era when the incandescent lamp, alone, was the only available source of illumination.

The 3 major sources of light from which we may make our selection to establish the above objective-criteria are the incandescent, fluorescent and mercury lamps. Various types and sizes of each are available, and many installations call for a combination or mixture of one or more of these light sources to effect certain results.

In general the needs of the customer, as summarized below, envelop quite an imposing number of lighting benefits and advantages, so that one of the vitally important jobs of the lighting salesman or engineer is to exercise careful judgment in determining those advantages which are relevant to the specific problem under consideration.

1. Attainment of at least minimum recommended foot-candles.
2. Quality of lighting considerations.
3. Brightness and brightness contrast.
4. Light for appraisal and easy seeing.
5. Light for attraction.
6. Light for atmosphere.
7. Appearance of the lighting system.
8. Light for color renditioning.
9. Factors of heat versus cool foot-candles.
10. Proper differentiation between those departments which are essentially work or selling areas, or areas designed primarily to create atmosphere.
11. Ease and cost of maintaining lamps and equipment.
12. Cost.

Cost naturally and inevitably affects the selection of light sources and a lighting system for any area. Consequently, if sensitivity to cost intrudes too strongly, the real economy of the proposed lighting may be lost. Therefore, the cost must always be expressed in terms of increased benefits and advantages; or, specifically, exactly what the customer receives for each dollar expenditure.

Furthermore, regardless of which light source is selected, the lighting system should invariably be designed to provide an average level of illumination **at least** equal to the Minimum, Maintained, Recommended Levels of Illumination as outlined in the I.E.S. Handbook.

Schools and Offices

Although the character of work being carried on in these two fields is somewhat different, nevertheless the eye task and requirements of good lighting practice are quite similar.

On the basis of equal foot-candles, and for rates above 1½c per KWH, the yearly owning cost—including the initial cost of the lighting system and the cost of maintaining and operating it, amortized over a period of approximately 10 years, fluorescent

THE ELEMENTS OF PLANNED LIGHTING

lamps will usually be found more practical, purely on the basis of economics.

For equal foot-candles there is approximately half as much evidence of sensible heat from fluorescent lamps.

If the KWH rate is 1½c or less, the yearly owning cost of a well designed system of incandescent lighting will usually be found of lower magnitude than that of the fluorescent system. (In such instances where it becomes necessary to completely rewire the building from the panel board to the lighting equipment for improved incandescent lighting, the additional cost could balance the scales in favor of fluorescent, due to its lower consumption.)

If the lighting system is to be designed for no more than a maximum of 30-35 foot-candles, there is very little sensation of heat discomfort in a room lighted with incandescent.

Furthermore, at levels of no more than 35 foot-candles the quality of illumination, brightness factors, appearance of the installation, etc., can be made every bit as effective and satisfactory with incandescent as it could be with fluorescent.

If cost is not too great a consideration, then the best quality of light incandescent system would be the one employing 50% to 75% more outlets than normally recommended, and utilizing lower wattage lamps. Such an installation tends to reduce brightness contrasts, and creates a more uniform distribution of light on the ceiling, wall and floor areas.

If special emphasis is being placed on cost, then fewer outlets with high wattage lamps should be recommended, as the increased efficiency (lumens per watt) of the higher wattage lamps, together with the reduced cost of wiring, number of fixtures required and cost of maintaining the equipment should result in an appreciable reduction in the yearly owning cost of the installation.

In general, and with but one exception, only the standard, inside frost, general service lamps should be used for lighting school and office areas, as they combine low cost with long design life to insure the minimum over-all cost of light.

However, if indirect lighting is specified, many customers have preferred to use the line of bowl silvered lamps. Their cost is usually slightly more than twice that of its comparable size in the general service type lamp, but to offset this increment of cost, the bowl-silvered type is reputed to have 1/3 better lumen maintenance throughout its life due to the relatively high maintained brightness and efficiency of its reflecting surface where no dirt can possibly collect.

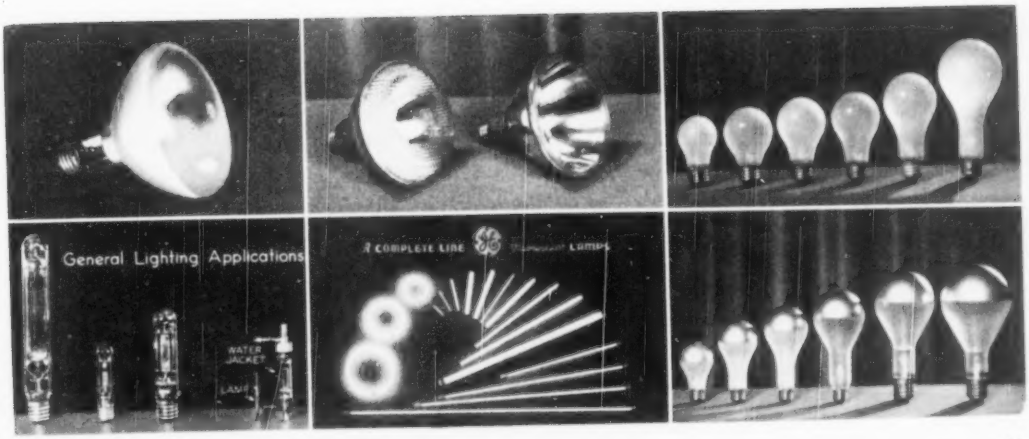
For installations designed for better than 30-35 foot-candles of general illumination, and in such cases where the cost of current is better than 1½c per KWH, there seems to be little question but that the fluorescent lamp is the source to choose. However, there is a wide variety of such lamps today from which to make our selection.

If the customer is seeking the ultimate in quality of light so that cost is only of secondary importance, there then seems to be little question but that the choice should be a line of low brightness lamps such as the 60-inch, 40-watt T-17, or the T-12 Slimline lamps operated at 120 in a.

Although the lumen output per linear foot of low brightness lamps is only about one-half that of their equivalent lamps, operating at normal current values, nevertheless their efficiency in lumens per watt is several per cent better. Such lamps reduce brightness and brightness contrast to a minimum, and tend to produce a very soft, well-diffused system of illumination which is particularly easy on the eyes.

A lighting system of low

(Continued on page 80)



LUMINAIRE

by J. Mason Guillory

Manager, Industrial & Commercial Division
New Orleans Public Service Inc.

Is the luminaire best for the job?

◆ Discussion of each of the seven elements which are listed on the I.E.S. Check Sheet necessarily involves some duplication since they are closely interrelated. Selection of the proper luminaire(s) for a specific job requires consideration of many factors, but one fundamental requirement is that the source of illumination be as unobtrusive as possible.

Too often stores selling everything *but* lighting fixtures, will have ornate, overbright luminaires mounted in the line of vision, so that the prospective buyer's attention is distracted from, instead of attracted to, the merchandise. In offices or factories, too, the worker should not be conscious of the light source—if he is, there is something wrong.

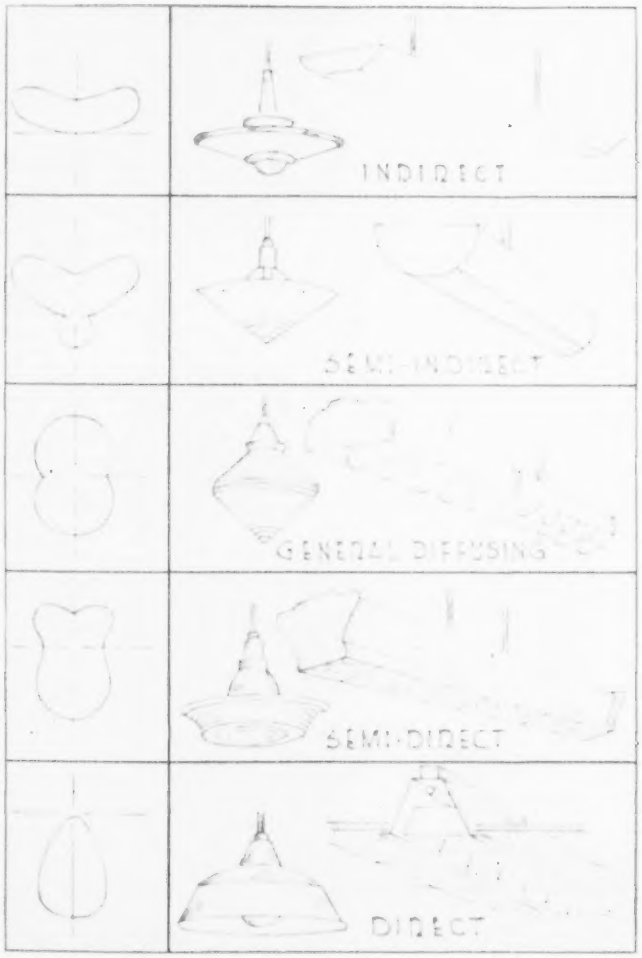
One other generally applicable recommendation is to avoid a multiplicity of types and sizes of luminaires and lamps. The lighting designer should recognize the fact that maintenance and lamp replacement problems are greatly simplified by standardization of luminaires to as great a degree as possible.

Present day luminaires, both for incandescent and fluorescent lamps, are listed according to distribution characteristics in five classifications as shown in the accompanying illustration and tabulation.

Lighting for a specific task may be accomplished with several of the types listed—and produce entirely acceptable results. However, in spite of the wide latitude in choice of fixtures, each illumination system design must take into consideration the particular situation involved. These considerations include maintenance conditions, economics, appearance, temperature, objects or interior to be lighted, architectural design or other special features. Each of these is worth a brief discussion.

The question of maintenance is receiving considerable attention today, and deservedly so. The higher initial cost of modern

(Continued on page 79)



Light distribution characteristics of typical luminaires.

THE ELEMENTS OF PLANNED LIGHTING

QUANTITY

Is the level of illumination correct?

by E. J. Good

Illuminating Engineer
Louisville Gas and Electric Co.

◆ THE NEW I.E.S. check sheet suggested as a measuring stick for judging the adequacy of a planned lighting installation certainly has considerable merit. Any lighting installation which can qualify on all seven points set out in the check sheet is one which will provide the user with the most efficient lighting system possible under present day standards.

One of the most obvious measures of the adequacy of a lighting installation is the amount or quantity of illumination it provides. To be considered efficient, the quantity or the intensity provided by the system must fit the seeing task required.

This brings us to the old question of how much light is enough. Foot-candle values recommended for most all of the visual tasks required are published by the Illuminating Engineering Society. These values have been revised upward over the years, as extensive studies regarding the relation of light to sight were made by the society.

Lighting intensities which were recommended as adequate a few years ago for close visual tasks have been doubled and tripled today, as the need for higher intensities to aid vision and protect eyesight has become apparent and the ability to produce higher levels of glare-free artificial illumination has become possible. To design a lighting installation today which does not meet present recommended foot-candle levels is doing an injustice to the ultimate user.

While criticism has been made in a few learned places that the foot-candle recommendations published by the I.E.S. are too high, they are accepted almost universally as a standard for illumination design by engineers in this country. Where critical seeing tasks are required for long periods of time, tests definitely prove that high foot-candle levels of lighting will not only increase the rate of work, but will reduce eye fatigue, restlessness, sleepiness and sometimes recurring headaches of the worker.

We can also prove by observation that high level lighting used for advertising purposes such as show windows, signs, and advertising displays, will attract the attention of more passersby than will a low level of illumination.

Our eyes are quickly adjusted to the extremely high intensities encountered on a sunny day, and we find that we can read easily and comfortably under the shade

(Continued on page 78)

•

The Baptist Seminary Chapel, shown above, recently built in Louisville, has a flexible lighting system. In this sanctuary, dimmers have been installed on the "down-lite" circuits and also on the colonial chandeliers. Levels of lighting can be varied from low, for a solemn service, such as a candle-light service, to a high level for such affairs as weddings.

THE ELEMENTS OF PLANNED LIGHTING

by Harold V. Oerting
Supervisor, Lighting Service Bureau
Potomac Electric Power Co.

QUALITY

Is the quality of light right?

◆ In determining whether a lighting job measures up to Planned Lighting standards, such factors as Quantity (foot-candles) and Brightness (foot-lamberts) can be accurately measured and judged. The luminaires and light sources can be analyzed readily, as can such factors as environment and ease of maintenance.

However, judging the Quality of a lighting job is not so easy. Quality of illumination refers to the general lighting effect. In judging quality, we must deal with something that is abstract or intangible, comprising a series of interrelated factors, the weight given to any one depending upon the seeing task involved and the effect desired.

For instance, in store display lighting, good quality means high brightness contrast, while in the school classroom good quality demands low brightness contrast. In a cocktail lounge, a warm flattering color of light would be considered good. However, this same color would be entirely unsuited to the lighting effect required in an art studio where white daylight color is essential for judging paints.

So—just what do we look for in appraising the quality of lighting in various types of occupancies?

In a store, where attraction, appraisal and atmosphere are the chief requisites, the important factors to look for in the lighting are brightness contrasts, meaning a planned pattern of high and low brightnesses to attract attention, quantity or enough light to permit quick and accurate appraisal, distinctive colors of light properly distributed to provide atmosphere.

In the school classroom or office where easy seeing is the important objective, the lighting to be of good quality must be adequate (conforming with standard tables of illumination) with brightnesses of work, desk tops, walls, ceiling and luminaires as nearly uniform as possible. If the latter condition is met, such unfavorable factors as glare, both direct and reflected, and shadows will be eliminated or minimized to the extent that they will not be objectionable.

In the church, good quality means lighting that permits comfortable seeing while creating an atmosphere conducive to meditation and worship. We see in the accompanying picture a church in which the lighting accomplishes this desired effect and therefore would be judged of excellent quality.

The ornamental chandeliers with low wattage lamps enhance the architecture and serve to create suitable atmosphere; gold-plated downlights flush in the ceiling distribute warm light uniformly and of adequate intensity for easy seeing (15 foot-candles); special built-in projectors direct concentrated beams of light on the pulpit, accentuating that important area. The ceiling, walls, floor and furniture are finished in high reflectance colors, assuring comfortable brightnesses throughout the church.

With flexible control through a carefully planned wiring system, the lighting can be changed to create any desired mood, conforming with the service. *Quality at its best.*

So we see that in judging quality of lighting, there is no such thing as a common denominator. Each type of interior presents

(Continued on page 78)

ENVIRONMENT

Were the surroundings considered?

by W. E. Folsom

Illuminating Engineer
Dallas Power and Light Co.

◆ EVERYTHING which makes a conscious or subconscious visual impression on a person influences his seeing process. In an office, the color of the desk top, furniture, floor and walls affects the quality of an employee's work or the ease with which it is done. In a school, every feature of a classroom has a favorable or adverse reaction on a child's learning. In a factory, the speed and accuracy of production of goods depends in some degree on whether the placement and color of the machine and the entire physical surround contribute to easy and accurate vision of the worker.

In fact, in every sort of interior, the combined effect of light and decoration is an important factor for comfortable vision.

The enlightened illuminating engineer approaches his problems—not with the thought of producing just so many foot-candles in a particular area—but of helping some human being make better use of his eyes. Light is an essential of vision, and lighting which does not contribute to better vision misses its mark entirely.

The psychology of color is well-known, especially as it affects human moods. The colors at the red end of the spectrum are warm and exciting, while colors in the blue-green area are cool and passive. Diluted colors are generally preferred for milder effects. Large areas of pure hues are seldom desirable because they are apt to be overwhelming.

What one sees usually appears as it does by the light it reflects. A green wall looks green because there is green in the incident light which is reflected. If the light source is rich in warm colors, as incandescent, with its yellow and red, the green wall will seem a warm yellow-green. If the source is daylight fluorescent, the same green wall will be a cool blue-green. So the color of the light source used will play a part in the appearance of the surround.

Strong contrasts in either color or light result in unsatisfactory and disturbing brightness patterns, which should be avoided where vision is a factor.

An analysis of the use of each area with attention to the visual condition of its occupants will set the pattern of the visual environment. The environment plan of a store is quite different from that of an office. A restaurant and a hospital room are at opposite ends of the visual scale. Pages could be written about the co-ordinated lighting and coloring of each and every human occupancy. Let's examine just a few typical visual uses of enclosed space.

Classrooms

Darell Boyd Harmon has developed a point of view which is leading the way to vastly improved classroom visual environment. In his "co-ordinated classroom," daylight is controlled so that its glare is minimized and its light is effectively diffused throughout the room. Desks are arranged so that children face away from

(Continued on page 77)

This view of the reception room of George Dahl, Architect, Dallas, shows a pleasing atmosphere created by the combination of functional lighting and decoration. Lighting is by coves, downlights, and a louvered ceiling. Finishes are a blend of pastel colors. Woods are bleached.

MAINTENANCE

Is easy maintenance provided for?

by Sam B. LeCornu
Lighting Specialist
Nashville Electric Service

◆ THE CONSIDERATION of maintenance is as much a factor in the planning of a lighting system and is equally as important a consideration as the other essential elements in the planning such as, illumination intensity, brightness, etc. Unless a plan is made for adequate maintenance even the most excellently designed lighting arrangement may become inadequate with the inevitable collection of dust and dirt.

One of best methods of insuring a consistent maintenance program is to facilitate such a program by planning the system with an ease of maintenance consideration in mind. A lighting fixture that is easy to clean will be cleaned more regularly than one that is a jigsaw puzzle to disassemble. And a source of illumination that is readily accessible will get attention before one that is difficult to reach.

In applying these fundamentals we should consider the psychology of good housekeeping, too, in a representative group of areas. We will have to concede that a candy store or a private office probably will be kept cleaner than a foundry or a machine shop. Between these two extremes we have many other types of work areas where good housekeeping has different levels of importance.

We also must consider the degree of importance attributed to good lighting. Obviously in an office, where the speed and accuracy of the work is in direct proportion with the quality and quantity of the light, we are likely to find a supervisor who is more interested in keeping the light up to a high degree of efficiency, while the average custodian of a county courthouse may have little interest in such efficiency.

All of these factors should be considered at the time of planning, with the designer remaining ever alert to the type of areas in which the lighting is to be used and selecting equipment to best meet the maintenance conditions found in these areas.

Considerations in the design of the luminaire will eliminate a great amount of the time and efficiency lost in the maintenance of a lighting system. Obviously, a fixture that emphasizes horizontal lines with large flat areas will be more susceptible to the collection of dust and dirt than one that features vertical lines.

A louver as the control medium in the bottom of an open top fixture will allow more of the dirt to pass through, than a rough surfaced diffusing medium. Louvers will be more difficult to clean but will not get dirty as quickly.

The Ideal Fixture

The ideal lighting fixture would be one that would provide the type of control that is desired and be hermetically sealed. Most fixtures of this type are relatively expensive and are not used as much as they should be. They will justify their initial cost over the years.

A totally enclosed unit must be of sufficient physical size to radiate the heat away from its surface without resorting to ventilation ports. Vent ports, generally, defeat the prime purpose of the enclosure in that they allow dust to enter the fixture. When a lamp is heated, the air expands and is forced out of the box. Upon cooling, after the lamp is turned off, the air is replaced, and carries with it dust and dirt.

Some industrial fixtures make use of this characteristic air flow to make the reflectors virtually self cleaned. A large opening is left in the top of the fixture around the lamp or in the socket husk and the heated air escapes through this opening. As the air is replaced through the open bottom of the fixture a flue action is created and the flow becomes continuous. If the reflecting surface is very smooth and on a high vertical slant, most of the air born dust will be in movement and will not settle on the surface of the reflector. This type fixture has found great favor in those very dirty industrial locations where a daily cleaning schedule would probably have to be effected in order to maintain even a reasonably clean lighting unit.

The second important consideration in planning for ease of maintenance is the accessibility of the lighting fixtures. The ecclesiastical lanterns in a Gothic Church will be cleaned and relamped on a much better schedule if they may be lowered on a winch for cleaning at floor level. These winches are small and portable and one will be all that is needed, for it can be moved from one location to another. The safety angle is important to consider in those areas where fixed seating is encountered. The erection of a ladder of suitable length in a church or auditorium and the ascension of

(Continued on page 76)

Protect Wiring

against lightning surges

An opportunity to be of *real* service to your customers *and* increase your average billing.

by L. H. Houck

♦ Disturbed by the heavy increase in service calls due to flashovers, lightning, or voltage surges, particularly during the spring "lightning" season, J. C. Crane, owner of the White Crane Electric Co., Eldon, Mo., made careful lists of the types of trouble that occurred and came to the conclusion that the contractor should provide the customer with some sort of protection.

An ordinary gap-type lightning arrestor did not give the protection needed because of its inability to drain the line of the damaging voltage before the damage was done. In short the voltages doing the damage wouldn't jump the gap.

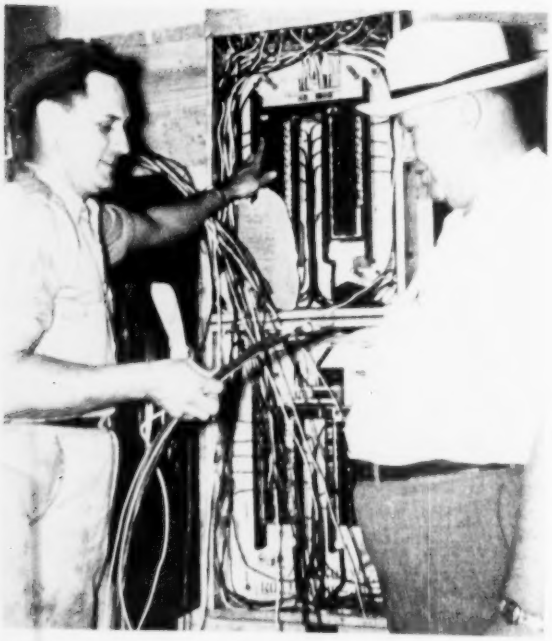
After making inquiries to manufacturers and supply depots he found that protective equipment of the valve-type was available, inexpensive, and thoroughly proved. He also discovered that at least one stock of protective devices of this type was carried in town by a utility but inquiry disclosed that none had ever been sold in the several years they were available, and even this turned out not to be so surprising, because nobody had ever been asked to buy.

This led Mr. Crane into the large field of protective devices, particularly line protection from lightning and voltage surges, and he has since installed large types on industrial circuits and regularly keeps a number of sizes in stock. However, one of the most neglected needs in the field of protective devices was a suitable unit for residential and farm user.

The pellet type protective device (General Electric Model No. 9LA15A4) was tried out and found to be efficient in use and economical to install. Mr. Crane put in a stock of these and asks each wiring job customer if he doesn't want the protective device included. No one has yet refused to buy. The device lists for

(Continued on page 74)

J. C. Crane, owner of White Crane Electric Co., Eldon, Mo., installing a pellet type service protector on a new house on which he had the wiring contract. No one has yet refused to buy this protective device when its use and protective qualities were explained, Mr. Crane said.



Gerald Hook, left, with M & A Electric Company, of Gadsden, Ala., for nine years, devotes a few moments to customer relations while working on a supermarket wiring job. The responsibilities given to him makes him feel that he "belongs."

Give your men RESPONSIBILITY

This personnel policy develops men with initiative who are able to relieve contractor of details

by Sam Carson

◆ Low EMPLOYEE turnover year after year is a pretty good indication that a shop is enjoying good employee relations. And if this low turnover rate has been experienced for 25 years, then it's a sure sign that the employer has been following a sound formula in managing personnel.

Half of the electricians employed by the M & A Electric company, of Gadsden, Ala., have

Contractor Morrow, right, who heads up M & A Electric, visits one of his electricians on the job especially to pose for this picture. L. D. Ingram, left, has seen 18 years of service with M & A. He is typical of the type of employee Mr. Morrow's personnel policy has helped to develop.

Men like these are able to cope with all of the problems that come up in the course of a job and leave Mr. Morrow free to administer the work of the company from an overall viewpoint. Charles Summerall, left, has been with Morrow for 17 years; Mr. Ingram is shown again at the right.

been with the firm for seven years or more. One worker has been on the job with M & A for ten years, another for 17 years, and a third for 18 years. These men are more than employees—they feel that, in a sense, they are partners in the business. That's because W. E. Morrow, in his quarter century of operation, has found that the best way to keep personnel out of the worry department is to delegate responsibility.

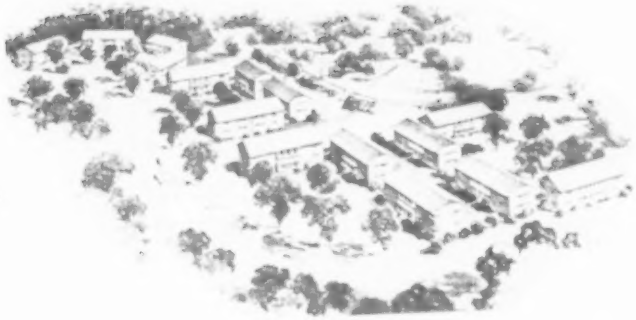
The responsible employee, says Morrow, is the one who recognizes company interests as superior to personal interests. Mr. Morrow compares the responsible employee to the member of a family who places family interests before his own. The electrician, for instance, who wants his company to do well practices good customer relations when he is out on a job. An M & A electrician doesn't feel that he is above cleaning up after he has finished a job; he knows that the continued success of his company depends, for one thing, on customer satisfaction. Morrow's men go further than the job to be done. They try to capture the customer's good will and, consequently, his future business.

"Full responsibility, exercised by the right men, always works out right." That's the way Morrow states his personnel policy. A good administrator, he believes that an employer develops the best in an employee when he demonstrates his confidence in the worker by making him fully responsible for the particular job or department assigned to him.

Not only are Morrow's electricians more satisfied and efficient under this policy, but Morrow also reports that it allows him time to be a more capable manager. A large volume operator in his city, Morrow finds that his personnel policy is one answer to the multiplication of detail that comes with expanded operations.

"If I had to keep up with the comings and goings of each one

(Continued on page 42)



ALL-ELECTRIC APARTMENTS

Simpler and less expensive, architect reports: no coal bins, fuel pipe lines or chimneys in the sixty-unit project.

◆ THE FIRST all-electric apartment project in Chattanooga—and perhaps in the South—has recently been completed. It offers a glimpse into the future from the heart of TVA-land.

The nine-building, 60-unit Glenwood Apartments is a one-utility job from automatic clothes dryers to wall heaters. There is not a coal bin, fuel pipe line, or chimney in the whole project.

Close co-operation between the Chattanooga Electric Power Board and the Allied Electric Company, contractors, resulted in well-planned, efficient installations and a minimum of delay on the big electrical job. Harrison Gill and Associates, local architects, first proposed the all-electric plan and asked the Power Board's sales promotion department to make wiring layouts and give estimated costs of operation of heating facilities. Paul J. McMillan, residential customer supervisor, handled the project for the Power Board.

Every kitchen is equipped with an electric range, water heater and refrigerator. There is an electric space heater in the wall of every room. Each basement laundry has an automatic washer and dryer.

In order to heat economically with electricity, factors of heat loss had to be considered. The Power Board recommended that the ceilings and walls be insulated with four inches of rock wool, the floors with half-inch insulation board, and the windows and doors weatherstripped.

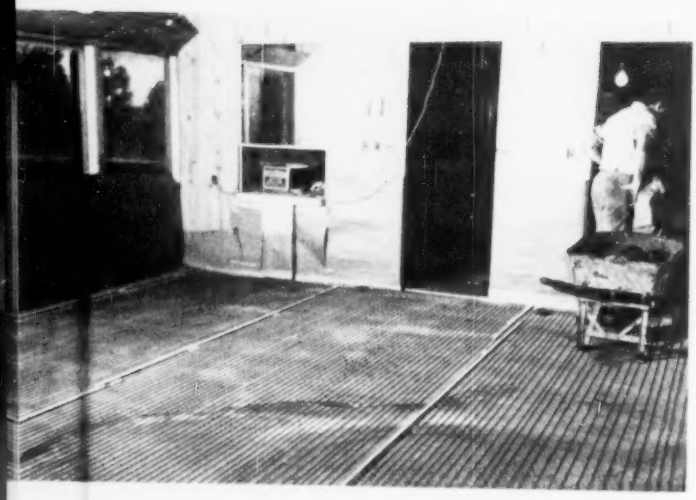
A typical eight-unit group of apartments has a 700,000 cir mil entrance cable and a 600 ampere main line switch. A standard multi-breaker panel controls range, water heater and lighting load. In addition, a 14-circuit line panel controls the electric heaters in each typical eight-unit building. Wiring of all general purpose circuits conforms with specifications of the Adequate Wiring Bureau.

In order to handle the required load for the project, the Power Board had to construct a special 12,000 volt primary line.

Speaking for the superiority of all electric housing, Harrison Gill, architect, said, "Its practical advantage is that it is a simpler and less expensive installation."

In spite of the lower cost and simpler installation, all electric equipment carries with it sales features that appeal particularly to the public. The absence of soot and smoke, for example, would appeal to many prospective tenants.

Electric Heating



Illustrated are two installations of electric cable heating showing the installation after heating cable has been stapled in place but before it is covered. The floor installed cable will be embedded in a concrete floor.

◆ A SIDELINE has become a specialty with J. T. Shannon, of Shannon Electric Co., electrical contractor of Nashville, Tenn. About three years ago the company began installing a new type of radiant heat. It is somewhat like the well known radiant heat in which hot water pipe is concealed in the walls, floor, or ceiling, except that in the Shannon method you use electric heating cable. The beauty of this system, from the electrical contractor's point of view, is that the electrical contractor gets the job instead of the plumber.

While electric cable for this purpose has been used extensively on the West Coast, it was entirely new to this section when J. T. Shannon and his partner sun took it on. When Shannon first started selling this method of heating prospective customers were skeptical. He had a difficult time getting his foot in the front door.

After he got four or five homes heated by this system, the idea gained momentum, and today, he can point to 100 homes in the Nashville area that have been radiantly heated the Shannon way.

These are the homes that his own firm has wired for cable heating and do not include those wired by other contractors to whom he issues licenses as the regional agent for this system.

The demand has become so great, the elder Shannon and his wife have turned over all other contracting work to their son, J. H. Shannon, in order to devote their attention exclusively to the promotion of radiant heat. He believes that it offers one of the most promising sources of new contracting jobs that the South has ever seen.

The firm has obtained agency rights for Roberson Heatsum Cable for all of Tennessee west of Knoxville, northern Alabama, a part of northern Georgia, and southern Kentucky. Under the recently organized Shannon Distributing Company, licenses are issued by the firm to other contractors in this territory. The Shannon Electric Company still installs, also, the better known electric heating systems under which the regular wall heaters are used.

Shannon believes that in any section where the kilowatt rate permits, the contractor is missing a mighty good bet if he doesn't investigate electric heat in general and cable heat in particular. So far, it is promoted in residences and not so much in commercial buildings. His experience shows that in sections where the average rate doesn't run above one cent per kilowatt-hour, electric heat can compete successfully with any other fuel system.

In the TVA territory, the domestic rate averages three-fourths of a cent per kilowatt-hour, when full use of service is made. Even in the higher rate section, electricity offers so many other advantages over coal and

for Homes

Electrical heating is *plus* business for the contractor — it represents dollars that formerly were spent with the plumber or the heating contractor. Contractors that considered residential wiring unprofitable a few years ago are learning that Adequate Wiring, Planned Lighting, and now electrical space heating, have increased the size of residential wiring contracts to a point where it cannot be ignored.

oil, it should appeal to the wealthier residents regardless of the differential.

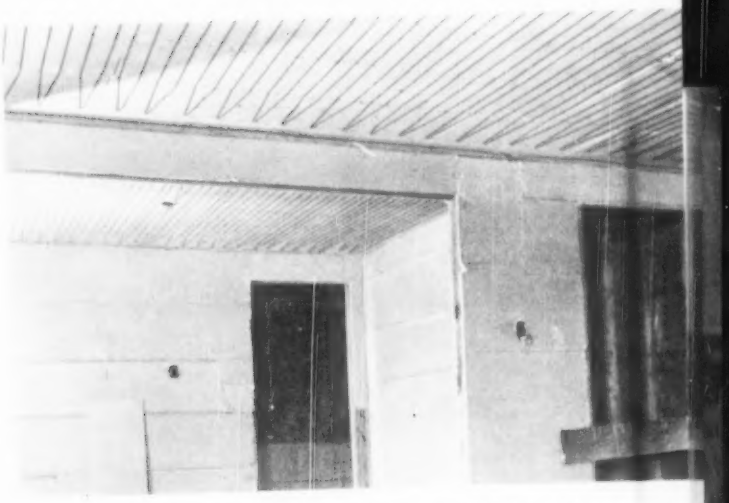
In Nashville, 87 per cent of all new homes being constructed are wired for some sort of electric heat. In addition, a large number of old residences have been so wired.

When Shannon took on the cable method three years ago, he had already built a fine business installing other electric heating systems. The cable idea looked good but his main problem was to get the first installed jobs from which he could win business and influence customers. He wanted something to which he could point with pride and say, "Now there it is, and the owner is tickled to death. How about signing on that line right there?" His plan should be helpful to other electrical contractors.

He first went to work on the architects, who are always interested in any new home improvement and, if it is workable, are not so hard to convince. He showed them several back copies of the *Architectural Forum* in which this new system was described, and it helped convince them. He talked with building owners and general contractors and showed them literature describing the operation of this system on the West Coast where it had already proven itself.

Little by little, he got the architects, contractors, fire insurance inspectors, and other key figures sold, and after that everything was easier.

Since it has now gained the strong foothold in a southern area, Shannon doesn't believe any



The ceiling heat installation will be concealed by plaster when the job is complete. The heating cable is available in a variety of sizes. The loops of cable are generally spaced 1½ to 2 inches apart. The size of cable is determined by heat loss of the house—a size is selected which will give the desired heat radiation in watts per square foot to heat the house comfortably at design temperature.

other contractor in this section will have a difficult problem selling the cable heating system to his trade. It is so well established in the Nashville area, that hard-to-sell prospects can be referred to this section and thus be convinced that it will work.

Mr. Shannon sold a franchise to a contractor in Murfreesboro, a town in Middle Tennessee. One of this contractor's electricians was at that time getting ready to build a home. He installed cable heat. This not only gave the contractor an initial home on which to whoop up other sales, but showed that his own personnel was willing to prove its faith by its works. Since then sales have been easy.

Mr. Shannon says that cable heat opens up another splendid possibility. In many southern cities, the reliable, responsible operators have been almost completely crowded out of the residential wiring market by curb-stone contractors who underbid them with inferior equipment and inferior service. Cable heating will enable the better contractors to recapture a lot of this business.

Attaching the cable coils to the

(Continued on page 70)

Southern Inspectors Pick Daytona Beach For Annual Meeting

◆ For the twenty-second time, electrical inspectors of the South and their associates in the electrical industry will meet for a three-day period of fellowship, Code discussion, and a briefing on trends in the electrical industry. The Sheraton Plaza Hotel, at Daytona Beach, Fla., has been selected as headquarters for the annual meeting of the Southern Section, International Association of Electrical Inspectors, to be held October 16-18, 1950.

A special feature of the meeting will be the exhibits of new electrical materials and equipment which will be located in the foyer at the entrance to the "Ocean Room" in which the business sessions of the meeting will be held.

A wide range of entertainment features are available at this world famous beach, and those attending the conference will have ample time to make the most of these entertainment opportunities. Special entertainment features have been prepared under the direction of George F. Cash, chairman of the arrangements committee, including a fish fry Monday evening, the annual banquet and dinner dance Tuesday evening, and a special program of activities for the ladies.

One of the features of these annual meetings which most members enjoy particularly is the "Code Breakfast." The friendly, informal atmosphere of these sessions always leads to interesting discussions of Code problems of current interest. A Code Breakfast will be held Tuesday morning at 7:30 under the chairmanship of Ben Z. Segall, of New Orleans, and another Code Breakfast will be held Wednesday morning at 7:30 under the chairmanship of F. C. Knox, of Miami.

During the three-day period of business sessions, considerable time will be allocated to Code discussion and inspectors' problems. Those seeking a better understanding of the Code changes scheduled for adoption later this year will find these Code discussion periods particularly helpful.

The program will also include a number of addresses discussing matters of important current interest such as new equipment, new processes, and important trends in the electrical industry.

The opening session will include addresses by Southern Section President J. N. McCammon and International President John E. Wise. Charles L. Smith, secretary-treasurer of IAEI, will also address the opening session, after which the members will hear reports from the Southern Section secretary-treasurer, A. M. Miller, the secretaries of the chapters,

(Continued on page 74)

One of the outstanding features of the 22nd annual meeting of the Southern Section, IAEI, to be held in the Sheraton Plaza Hotel, at Daytona Beach, Fla., on October 16-18, will be the exhibit of new materials and electrical equipment that will be displayed in foyer at the entrance to the "Ocean Room" where the business sessions will be held. A few choice exhibit spaces are still available, varying from 8 by 10 feet to 8 by 16 feet in size, at a price of $50 to $60. Further details can be obtained by writing Mr. Walter A. Stall, Main and Orange Streets, Jacksonville.

Eye-catching beauties — scenic and otherwise — feature Daytona Beach

Notes on the Code

by R. B. Boyd, Jr.

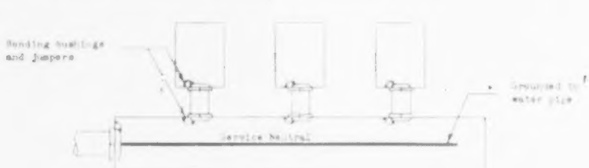
Asst. State Electrical Engineer
Raleigh, N. C.

◆ THESE DIAGRAMS and notes were distributed to those attending the recent meeting of the Electric Institute sponsored by the N. C. Chapter of IAEI, N. C. Insurance Dept., and the N. C. State Board of Examiners of Electrical Contractors. They explain some of the sections of the National Electrical Code that are being misunderstood and neglected.

Grounding and Bonding of Service Equipment—Sections 2514, 2523, 2571, and 2572.

Double locknuts and bushings do not meet the grounding and bonding requirements for service equipment—Section 2572-e.

Bonding jumpers shall have a current-carrying capacity not less than is required for the corres-ponding grounding conductor—Section 2577-a.



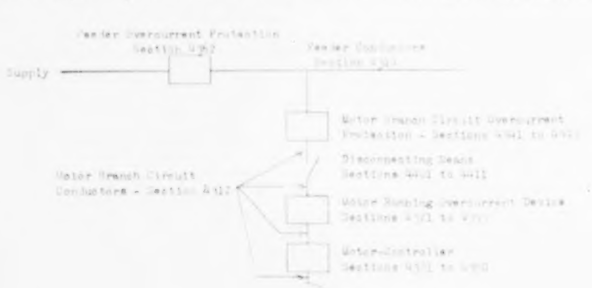
Emergency Lighting—Sections 7003 and 7011.

"Emergency lighting shall include all required exit lights *and all other lights* specified as necessary to provide sufficient illumination to enable persons to see their way out of the building."

Upon inspecting we find that many contractors, electricians and architects fail to realize that aisle lights, when installed, are considered as emergency lighting and should be supplied current as required by Section 7011. If aisle lights are installed, they shall be connected to a separate branch in the emergency panel.

Motor Feeder and Branch Circuits.

This diagram provides a convenient guide to sections in the Code containing the rules for motor feeder and branch circuits.



Neutral Conductor Size—Section 2203-g.

The neutral conductor shall be large enough to take care of the maximum unbalanced load up to 200 amperes. A demand factor of 70% may be applied to that portion above or in excess of the first 200 amperes.

(1) On single phase systems (115-230 volts) the 230 volt loads do not affect the neutral wire size.

(2) On three phase systems the three phase loads do not affect the size of the neutral.

Example: Suppose we have a three phase star system with a grounded neutral (120/208 volts) and the following loads:

300 amperes of 3 phase loads.

350 amperes (each leg) of 120 volt loads.

The minimum size neutral would have to carry 100% of the first 200 amperes (120 volt loads) plus 20% of the excess portion or 70% of 150 amperes. This gives a total of 305 amperes and from Table No. 1 we find that a 350 MCM type RH would be required.

Color Coding—Section 2112.

". . . . All circuit conductors of the same color shall be connected to the same ungrounded feeder conductor throughout the installaton." (Section 2112)

12 circuit, 120/208 volt lighting panel

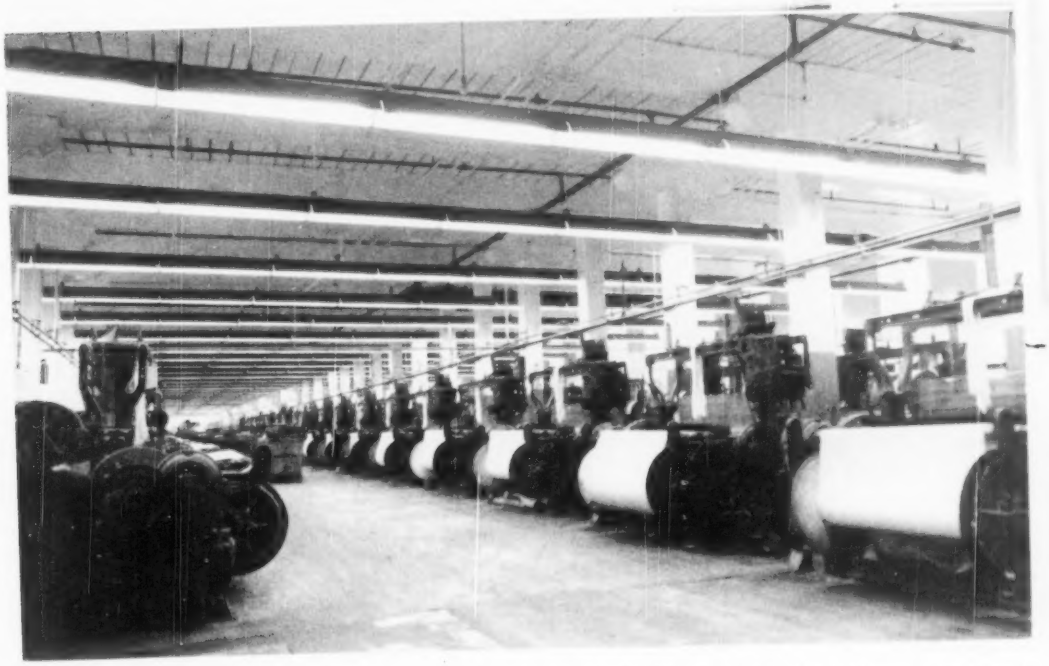
(1) All multi-wire branch circuit conductors must have a continuous identifying marking complying with Section 2112.

4 wire—red, black, blue, white
3 wire—black, white, red

(2) All feeders must be color coded at the terminals during the process of installation. Painting will be acceptable for conductors

(Continued on page 69)

LIGHTING PROGRESS IN THE SOUTH



LIBRARY—Artmetal troffers with Holophane Contolens No. 9100 with three 40-watt lamps per four-foot section provide 60 foot-candles in this reading room of A & I State College, Nashville, Tenn. Lighting Engineer was S. R. LeCorne, of Nashville Electric Service.

WEAVE ROOM—Heavy duty Miller fixtures in continuous rows with 40-watt lamps at the Brookford Mills, Brookford, N. C., provide 55 foot-candles, maintained in this weave room. The installation was laid out by James Locke, of General Electric Supply Corp., Charlotte, N. C.

LIGHTING PROGRESS IN THE SOUTH

RESTAURANT—The Garden, in Knoxville, Tenn., is lighted with slimline troffers equipped with diffusing glass. Recessed Pittsburgh concentrating units are arranged over curved counter and glass front. Lighting designed by Leslie B. Pierson, Knoxville Utilities Board.

SHOE STORE—Brooks Shoe Co., Macon, Ga., has sales floor illumination of 55 foot-candles. Mitchell Module D slimline units are arranged in pattern emphasizing departments. Mitchell Module B spots accent showcases. Lighting engineer: J. E. Sweatte, Jr., Georgia Power Co.

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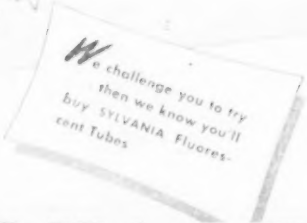

For complete information about the life and brightness of Sylvania Fluorescent Tubes write to Sylvania Electric Products Inc., Dept. L-5309, 1740 Broadway, New York 19, N. Y. or your nearest branch office. In Atlanta—660 Murphy Ave., S. W. and in Kansas City—2109 Broadway.

SYLVANIA ELECTRIC

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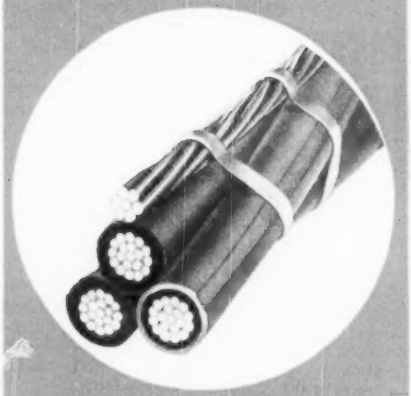
LIGHTING PROGRESS IN THE SOUTH

OFFICE—The Benjamin louvered ceiling in this reception office of the Gunther Co., Baltimore, Md., provides well over 100 foot-candles. A general office 32 x 42 feet has a similar installation delivering 115 foot-candles. Lighting engineer: H. M. White, Consolidated Company.

BANK—Fluorescent strips in coves and 500-watt incandescent lamps in Pittsburgh Permaflector recessed units light the First National Bank of Orlando, Florida. Designed by Bank Building and Equipment Co. of America, St. Louis. Installation made by Johnson Electric Co., Orlando.

SIMPLEX-ANHYDREX AERIAL CABLES

KEEP OVERHEAD DISTRIBUTION COSTS AT DOWN-TO-EARTH LEVELS



Self-Supporting Type
Bound at the Factory to Supporting Messenger

Installing Cables by Spinner Method

Wherever the installation, whatever the service conditions, Simplex-ANHYDREX Aerial Cables provide a sure-fire means of cutting the cost and improving the performance of overhead distribution systems.

Anhydrex insulated, neoprene jacketed, and designed for installation by either the self-supporting or spinner methods, they furnish a wealth of advantages over open wire lines—advantages that mean uninterrupted service year in and year out plus big savings on installation and maintenance. Some are listed below, but there are many others you'll want to know about. All are described in the Simplex Aerial Cable Catalog which we will gladly send to you upon request. Simply fill in and mail the coupon below.

ADVANTAGES FOR INSTALLATION

- Less labor needed to install
- Can be installed on existing pole lines
- Crossarms not needed
- More circuits per pole
- Low congestion on poles; phases and neutral assembled together
- Little or no tree-trimming required
- Smaller clearances needed
- Unrestricted cable routing
- Attractive appearance

OPERATING ADVANTAGES

- Better regulation
- Anhydrex insulation has high dielectric strength, low power factor and low dielectric constant
- ANHYDREX is unexcelled for resistance to moisture
- Neoprene jacket provides protection against oil, chemicals, fungus, heat and sunlight
- Neoprene resists abrasion by swaying limbs and chafing against poles
- Fewer service interruptions due to winds, icing, and lightning
- Not subject to corrosion
- Higher safety factor for people and property below
- Less maintenance required

SIMPLEX WIRE & CABLE CO.
79 SIDNEY ST., CAMBRIDGE 39, MASS.

NAME _____ TITLE _____

COMPANY _____

STREET _____

CITY _____ STATE _____

SIMPLEX
WIRES & CABLES
SIMPLEX WIRE & CABLE CO.
79 Sidney Street
CAMBRIDGE 39, MASS.

INDUSTRY NEWS

Exchange Names Committee Heads

◆ CHAIRMEN of sections and committees of the Southeastern Electric Exchange have been appointed for the 1950-51 administrative year of the Exchange by W. O. Turner, president.

Heading the Sales Section is S. L. Drumm, vice-president of New Orleans Public Service, Inc. This section includes five committees with the following chairmen: Advertising, J. W. Kling, manager Advertising Dept., Georgia Power Co., Atlanta; Agricultural Development, Neil Bolton, agricultural agent, Tide Water Power Co., Wilmington, N. C.; Commercial Sales, Lather T. Cale, commercial sales manager, Birmingham Electric Co., Birmingham; Industrial Power, D. B. Hyer, Jr., commercial manager, Florida Power Corp., St. Petersburg; and Residential and Rural Sales, J. H. Keele, commercial co-ordinator, Florida Power and Light Co., Miami.

W. T. Hess, vice-president, Louisiana Power and Light Co., has been appointed chairman of the Engineering and Operations Section. J. B. Coltharp, supt. of the Transmission and Distribution Dept., of Gulf States Utilities Co., Baton Rouge, La., will head the Distribution Committee. Production Committee will be under

W. T. Hess

S. L. Drumm

A. J. Skaale, supt. of power, Carolina Power and Light Co., Raleigh, while J. A. Rawls, supervisor of electrical equipment and transmission, Virginia Electric and Power Co., will head the Transmission Committee.

Other appointments include: Accounting Section chairman, W. J. Ready, South Carolina Electric and Gas Co., Columbia; Personnel Section chairman, A. M. Williams, Jr., South Carolina Electric and Gas Co.; Power Co-ordination chairman, H. J. Scholz, Southern Services, Inc., Birmingham; Butane Gas Competition chairman, J. P. Connolly, South Carolina Electric and Gas Co., Charleston; Heat Pump Committee chairman, E. C. Easter, Alabama Power Co., Birmingham.

Seamless Aluminum Cable Sheathing

◆ A METHOD for applying a seamless sheathing of aluminum to telephone and electric power cables has been developed by Aluminum Company of America, company officials have announced. This new method, for which patent application has been made, involves the principle of cold reduction, or swaging (as by a tube reducer).

Seamless aluminum sheathing for cable is thinner, stronger and lighter in weight than the usual lead sheathing. These advantages are in part because aluminum has about one-fourth the density of lead, and in part because aluminum, with its higher yield and tensile strengths, can be applied in approximately one-half the thickness required of lead. Consequently, one foot of the new sheathing weighs about one-eighth as much as an identical length of lead sheathing. Significantly, the product developed by Alcoa is softer and more flexible than similar aluminum sheathing produced heretofore.

Substantial lengths of this seamless aluminum sheathing are now being tested by a number of cable manufacturers. About 3500 feet were used in the telephone system of Alcoa's new reduction works at Point Comfort, Calhoun County, Texas.

Southern Company Reveals Campaign

◆ A VIGOROUS advertising campaign to attract new industries and businesses to the South was announced recently by E. A. Yates, chairman of the board of The Southern Company.

In addition to the nation-wide advertising program which will emphasize the great movement of industry to the South, the intensive diversification in agriculture, its growing markets, ideal climate and skilled workers, advertisements will be published in southern newspapers. They will run in all daily newspapers throughout the territory served by The Southern Company and its four associated operating companies — Alabama Power Company, Georgia Power Company, Gulf Power Company, and Mississippi Power Company.

The national advertisements, some of them in full pages and in four colors, will emphasize the tremendous strides made during the past few years in industry, business, agriculture, education, recreation, and health throughout the 105,000-square-mile area served by the operating companies in The Southern Company.

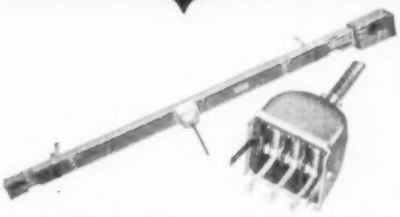
The national advertising campaign will begin in September. Full-page, four-color advertisements will be published on a monthly schedule in *Newsweek*, *U. S. News and World Report*, and *Business Week*. Similar advertisements will run in the *Wall Street Journal*, *New York Journal of Commerce*, *New York Times*, *Chicago Tribune*, *Invest-*

PLUGIN FA BUSDUCT

YOUR ELECTRICAL DOLLARS WILL GO MUCH FARTHER with Plugin FA Busduct . . . because here's an electrical distribution system designed to economize on everything but efficiency.

By providing convenient plug-in outlets every foot of the way, there's always a ready power source for new or present equipment anywhere along the production line . . . just plug-in wherever you want . . . no slowing down production to make needed changes . . . no expensive wiring delays . . . no high cost electrical maintenance . . . in fact, there's nothing much to do but *plug-in and let 'er roll.*

Add up these and many more cost-cutting features of Plugin FA Busduct . . . and you'll agree that here is the electrical distribution system that makes ends meet in more ways than one.



FA **POWER PLUGIN**, the new midget-size Plugin FA Busduct of 50-amp. feeder capacity, is now available for equipment requiring connections for ½ to 5 HP motors, 240 volts or less, AC or DC (7½ HP maximum, with dual-element fuses).

Featuring all the convenience, flexibility and economy of Plugin FA Busduct, this new Underwriter Laboratories approved duct is made in 5-ft. and 10-ft. sections with plug-in outlets every 20 inches . . . additional outlets and special lengths available on special order.

For more information about Plugin FA Busduct and FA Power Plugin, write for Bulletins 701 and 705 . . . or talk to your FA Representative (he's listed in Sweet's).

Frank Adam Electric Co.

ST. LOUIS 13, MISSOURI

Makers of **BUSDUCT • PANELBOARDS • SWITCHBOARDS • SERVICE EQUIPMENT • SAFETY SWITCHES • LOAD CENTERS • QUIKHETER**

ment Dealers Digest, Washington Star, and *Chicago Journal of Commerce*.

The magazines and newspapers to be used on a monthly basis have a circulation of 5,873,734.

Carolina NECA Elects Peele

◆ Elwood C. Peele, of Burlington, N. C., was elected president and secretary of the Carolinas Chapter of the National Electrical Contractors Association at its annual convention at Charleston, S. C., August 11-12. He succeeds H. E. Austin, of Charlotte, N. C.

Other officers elected for the coming year are: Joe W. Dunn, of Columbia, S. C., first vice-president; E. W. Hanks of Charlotte, second vice-president; John C. Bolen of Charlotte, treasurer; C. W. Moseley, of Charlotte, national counselor; and R. K. Robinson, of Charlotte, governor.

Named on the executive committee were J. A. Griffeth, of Greenville, S. C.; G. C. Speare, of Spartanburg, S. C.; W. C. McGregor, of Anderson, S. C.; Ralph Pressly, of Asheville, N. C.; and Mr. Austin, the retiring president.

Western Wire Occupies New Plant

◆ Western Insulated Wire Co., manufacturers of insulated electrical cords and cables, announce that they have completed removal of equipment and materials and are now in operation at 2425 East 30th Street, Los Angeles 58, address of the first 40,000 square foot unit of their new plant.

The half million dollar factory will be devoted to the manufacture of Neoprene- and rubber-jacketed portable cords and cables, asbestos insulated wires and cables, and miscellaneous cords, fixture and communication wires and cables.

Western Insulated Wire Co. was founded in Los Angeles thirteen years ago and shortly thereafter pioneered the manufacture of Neoprene-jacketed cords and cables as standard commercial products. Since that time Western has become the third largest user of Neoprene on the West Coast.

Although manufacturing operations of the Western Insulated Wire Co. are centered on the West Coast, strategically located warehouse stocks and agents with headquarters in principal U. S. cities give Bronco products nationwide distribution.

New Distributor Appointment

The A & A Supply Company of Abilene, Texas, has been named exclusive electrical representative of the F. D. Kees Manufacturing Co., Beatrice, Nebr., in Texas, exclusive of the panhandle district, New Mexico, and Arizona. The sales agreement went into effect recently.

•

The Rumsey Electric Co., Philadelphia, Pa., has announced the new location of their regional office and warehouse in Richmond, Va., at Moore Street and Altamont Ave., telephone 5-4379.

This is the first unit of the new plant recently occupied by Western Insulated Wire Co., at Los Angeles. Increasing demand for Bronco 60 Certified Neoprene-jacketed cable necessitated the expansion, the company reports.

NAMES IN THE NEWS

H. Ed Grant, owner of Tennessee Electric Motor Service, Nashville, Tenn., was recently elected president of the **National Industrial Service Association** at the NISA 17th annual convention in Boston.

Mr. Grant was born in Tucker, Ga., and educated at Decatur High School. He was later with Chicago Engineering Works, the Pullman Company, and United Motors Service, Atlanta.

H. E. Grant

In April, 1936, Mr. Grant came to Nashville and established the Tennessee Electric Motor Service as a partnership with M. G. Miller. A branch of the company was later opened in Knoxville where Mr. Miller moved to serve as manager. Mr. Grant remained as manager of the Nashville plant. On January 1, 1945, the partnership was dissolved and Mr. Grant sold his Knoxville interests to Mr. Miller and in turn bought Mr. Miller's interests in the Nashville plant.

In September, 1949, Mr. Grant purchased and now operates the Alldritt Electric Motor Company, of Miami, Fla., in addition to the Nashville company.

Before election as president of NISA, he had served the association as secretary, treasurer, and vice-president.

•

C. L. Schneider, vice-president and sales manager of **Electro Manufacturing Corporation**, Chicago, has announced the appointment of **Bob J. Kuzell**, 639 Whitehall St., S. W., Atlanta, as their district manager and resident engineer in Georgia, Alabama, and Florida.

Mr. Kuzell is an electrical and illuminating engineer with a background of five years experience in the engineering department of General Electric Co., Nela Park, Cleveland. During the last war he served as an Army Air Force electrical engineer and has been located in Atlanta since 1944.

"Light Magic"

FOR WORKING WONDERS *in* PLANNED LIGHTING!

Pittsburgh Permaflector

TWO NEW 48" and 96" SLIMLINE LUMINAIRES

THE "WASHINGTON" SLIMLINE LUMINAIRE features an egg-crate louver bottom and Skytex satinal glass side-panels. It is made in 2, 3 and 4 lamp models. Standard operation is 425-MA with T-12 lamps. Bridge-truss construction assures a unit which "hugs" the ceiling when it is surface mounted.

THE "HARRISON" SLIMLINE LUMINAIRE, in 2, 3 or 4 lamp models. Gracefully curved side-panels, flat bottom-panels of Albo-Lite glass distinguish this modern slimline luminaire. Companion incandescent units are designed especially for use with the "Harrison" and other Presidential Fluorescent Luminaires.

The flexibility of Pittsburgh Permaflector Lighting Equipment is a modern miracle of design and construction.

For example— Pittsburgh Permaflector Slimline Luminaires are available in 48" and 96" lengths. They may be surface or pendant mounted, individually or end-to-end. When used with companion incandescent down-lights, they can be installed to form squares, rectangles, "T's", crossovers, checkerboards and other patterns.

Such flexibility allows you full creative expression and makes possible "custom designed" lighting results with economical *standard* equipment.

Write today for more information on these versatile units.

PITTSBURGH REFLECTOR COMPANY

405 OLIVER BUILDING • PITTSBURGH 22, PENNSYLVANIA

MANUFACTURERS OF FLUORESCENT & INCANDESCENT LIGHTING EQUIPMENT

Permaflector Lighting Engineers in All Principal Cities

PITTSBURGH PERMAFLECTOR LIGHTING EQUIPMENT IS DISTRIBUTED BY BETTER ELECTRICAL WHOLESALERS EVERYWHERE

a hit for your kit!

BURNDY **SERVIT**

Here's the handiest split-bolt connector in any workman's kit—the Burndy Servit! Ideal for taps, dead ends, service entrances, motor leads, junction boxes, and ground wire to neutral connections.

For long years of low resistance, trouble-free connections, ask your Burndy distributor for Servit!

- Servit forces wires into tight contact
- Made of expertly balanced alloys for high conductivity, and for strength
- Serrated pressure bar resists creeping and spot loading
- Withstands overload, vibration and corrosion
- Compact - rounded edges tape easily
- Listed by Underwriters Laboratories Inc. from No. 10 thru 4/0 AWG

BURNDY NEW YORK 54, N. Y.

WESTERN BRANCH: VERNON 11, CALIFORNIA • CANADA: BURNDY CANADA LTD., TORONTO 8

Julian J. Smith, president of **A. L. Smith Iron Company**, Chelsea, Mass., recently announced the appointment of **Hugh M. Nazor** as vice-president in charge of sales, **Smithcraft Lighting Division**. Mr. Nazor is a native of Kentucky, and received his B. S. in Electrical Engineering from the University of Louisville, and his M. S. in E. E. from M.I.T.

Hugh M. Nazor

From 1932 through 1936, Mr. Nazor owned and operated the A-A Electric Company, a contracting firm in Louisville, Ky. For the past 14 years, he has been associated with Graybar Electric Company in various capacities, including manager of the Akron, Ohio branch, and manager of the Syracuse, N. Y., branch.

•

John L. Busey, of Bridgeport, Conn., has been elected a vice-president of the **General Electric Company** and placed in charge of marketing policy, a newly created post, it has been announced by **Charles E. Wilson**, G-E president.

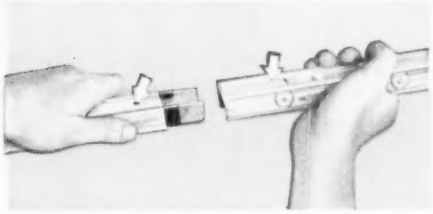
Mr. Busey has been president and a director of the General Electric Supply Corporation.

Concurrently, **William V. O'Brien**, of Schenectady, N. Y., formerly general sales manager of the General Electric Company's Apparatus Department, has been elected a commercial vice-president and has been appointed assistant manager of marketing policy for the company. **Charles R. Pritchard**, of Bridgeport, formerly manager of marketing for the G-E Appliance and Merchandise Department, has been elected president and a director of the G-E Supply Corporation. Mr. Busey and Mr. O'Brien will establish headquarters in New York and Mr. Pritchard in Bridgeport.

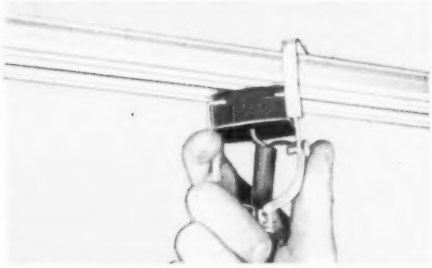
In making these announcements, Mr. Wilson said that the new marketing posts were created because their need has been emphasized by the sustained high level of the company's business volume, by the greater diversification of its products, and, in particular, by a steadily growing appreciation of the importance of marketing as a function of the company's business.

How to move or add lights anywhere, anytime without costly rewiring

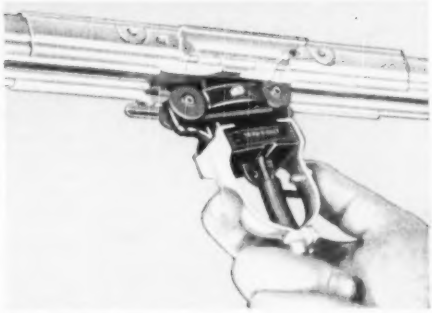
BullDog Universal Trol-E-Duct provides continuous outlet, completely flexible lighting



Duct sections are joined without tools, nuts or screws. Prefabricated and standardized in lengths from one to ten feet, they can be dismantled and re-installed anytime, anywhere without scrapping a single part.



To tap off power at any point along the slot, simply insert twist-out plug and give it a 90° turn. Plugs are grounded on steel casing before contacts touch bus bars; narrow-access slot protects operator.



Trolley-type outlets are used where mobility is a prime requisite—such as for small portable tools or for drop-cord lighting in stock bins and inspection areas.

Safe, simple, quick! Tap off power from totally enclosed bus bars at any point along the continuously slotted duct with handy trolleys or twist-out plugs. Universal Trol-E-Duct both supports and supplies current to these fluorescent lighting fixtures.

LIGHTING changes come high with old-fashioned fixed outlet systems! Lick this problem once and for all with modern, economical BullDog Universal Trol-E-Duct.

Every inch of this sensational 50-A duct system is a tap-off! To move or add lights or small power tools, simply pick the right spot and insert handy twist-out plug or trolley. And it can be dismantled and moved *anywhere, anytime* without scrapping a single part.

Learn more about this modern, efficient system today from your nearby BullDog Field Engineer. He will be glad to show you a typical installation near your plant. Or write BullDog direct for descriptive literature.

BULLDOG ELECTRIC PRODUCTS COMPANY

DETROIT 32, MICHIGAN — FIELD OFFICES IN ALL PRINCIPAL CITIES

IN CANADA: BULLDOG ELECTRIC PRODUCTS OF CANADA, LTD., TORONTO

BULLDOG

HEADQUARTERS FOR ELECTRICAL DISTRIBUTION

A choice of 3 FINE UNITS at MONEY SAVING PRICES!

SILV-A-KING'S popular Industrial Fluorescent Units are now available in a wide price range — there's one to fit every purse and every purpose.

2152 PT

***SPECIFICATION**

RLM approved with G. E. Turret Lampholders. Width 13½", length 52". Available with either open or closed-end reflector. Lifetime porcelain enamel.

List Price $27.50

1140 P

***ECONOMICAL**

a full size 13½" W x 52" L open-end unit. It offers many of the famous Silv-A-King features found in the "Specification" line.

List Price $21.75

P-402

***THRIFTY**

a brand new unit designed to sell at the very lowest price for a quality unit. Open-end reflector, 11" W x 48" L.

List Price $16.15

*Units illustrated and prices quoted are based on 2—40 W lamp units with a lifetime porcelain-enamel reflector. Also available in synthetic baked enamel at slightly lower prices.

Now there's no need to lose any business on Industrial Fluorescent installations. The highest quality . . . modern design . . . patented features — all at prices your customers will be glad to pay — are included in the Silv-A-King line. Write for catalog and complete specifications.

BRIGHT LIGHT REFLECTOR CO.
INCORPORATED

Subsidiary of
Bridgeport Pressed Steel Corporation
FAIRFIELD & STATE
BRIDGEPORT 5, CONNECTICUT

SILV-A-KING LIGHTING EQUIPMENT

SALES OFFICES—L. Morris Landers Company, 624 Spring Street, N. W., Atlanta 3, Ga.—L. W. Roberts Company, 115 East Cary Street, Richmond, Va.; 927 Guilford Bank Bldg., Greensboro, No. Carolina—Harry A. Miller Company, 1902 ½ McKinney Street, Dallas 1, Texas

Charles L. Woodyard, who formerly represented the **Leader Electric Company** in Kentucky and West Virginia, has been appointed their sales representative for Georgia and Alabama, according to a recent announcement

Charles L. Woodyard

from **Walter Glass**, president of Leader Electric Company, in their main office in Chicago.

Mr. Woodyard has opened offices at 1181 Stewart Ave., Atlanta. In addition to his prior service with Leader, he has had eight years experience as a wholesaler's salesman whose principal lighting equipment supplier was Leader.

•

J. W. Horne has been named manager of the **Graybar Electric Company's** Memphis branch, succeeding **C. E. Kirkpatrick**, who recently was appointed district manager for the company at Cleveland. **C. S. Powell**, St. Louis District manager, announced recently.

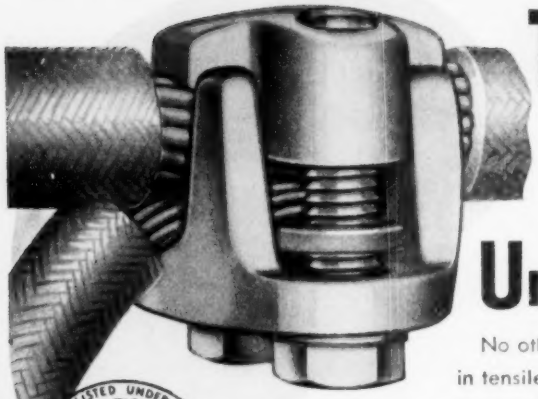
A native of Pensacola, Fla., Mr. Horne comes to his new position from that of manager of outside construction and power apparatus sales at Jacksonville. He joined Graybar as a shipping clerk at Miami in 1933. One year later he became an appliance salesman and served in that capacity and as a combination appliance and supply salesman in Miami, Savannah, and Tampa. In 1944, he was made manager at Savannah. He was transferred to Jacksonville in 1947.

•

Erwin H. Will, former general manager of operations of the **Virginia Electric and Power Company**, was elected a vice-president of the company at a recent meeting of the board of directors held in Richmond, Va. **M. C. Smith**, a vice-president of the company since 1936, was made vice-president and general manager.

Mr. Will is a native of Richmond where he received his early education and later graduated from the Virginia Polytechnic Institute with the degree of B. S. in mechanical engineering. He joined the organization of the Virginia Railway and Power Company, predecessor of Vepco, in 1922, and was

Who are You?
Contractor?
Architect?
Dealer?
Wholesaler?
Whatever your particular interest in steel switch and outlet boxes, you know the *Quality* that makes Raco products unfailingly dependable, the *Completeness* of the Raco line for all commercial and home wiring jobs. Add to these the *Approval* by Underwriters Laboratories, Inc., and you have all the assurance you need that Raco is right. All of this is the result of policy—a disciplined resolve to make Raco products the top line in the market.
You can always rely on RACO
RACO
ALL-STEEL EQUIPMENT Inc.—800 Kensington Ave., Aurora, Illinois
"A BOX FOR EVERY NEED"



Test after Test

has proved the PENN-TAP'S

Unequalled Strength

No other fitting of this type has matched the Penn-Tap in tensile strength, in numerous tests to destruction. The reason is obvious:

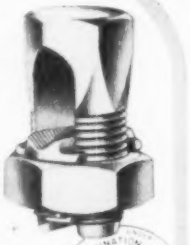
The Penn-Tap is more sturdily constructed . . . exceptionally tough silicon bronze alloy and *more of it* (at no added cost).

For taps, service entrance connections, dead ends . . . indoor or out. Quickly installed with ordinary wrench.

ONE PIECE—no loose parts . . . swivels on one locked bolt. Holds tight permanently. 7 sizes, for cables 10 Str. to 1,000 MCM.

LISTED UNDER REEXAMINATION SERVICE UL UNDERWRITERS' LABORATORIES, INC.

Only one other Split Bolt Connector can take as high clamping pressures as PENN-UNION



Hundreds of competitive torque tests, of Penn-Union Split Bolt Connectors against other fittings of this type, have shown:

The Penn-Union Connector is *definitely stronger than all others except one, which closely follows Penn-Union design and is nearly equal.*

Excepting this one similar fitting, the Penn-Union Connector withstands clamping pressures 15% to 55% higher.

MAKE THESE TESTS YOURSELF. We will gladly furnish sample Penn-Union Connectors for tests against any other make. *Just tell us the sizes you are using.*

SOLD BY LEADING WHOLESALERS. WAREHOUSE STOCKS CARRIED BY —

BEN K. PATTON
Gulf Sales Agency
504 Delta Bldg.
New Orleans, La.

L. MORRIS LANDERS
624 Spring St., N.W.
Atlanta, Ga.

WALTER J. HUEMMER
Dallas Transfer &
Term. Wareh. Bldg.
Dallas, Texas

PENN-UNION ELECTRIC CORPORATION, Erie, Pa.

PENN-UNION

subsequently transferred to Norfolk as head of the engineering department of the company. In 1928, he became manager of the Suffolk district of Vepco.

During the 12-year period from 1935 to 1947, he lived in Texas where he served as superintendent of the El Paso Electric Company at El Paso, Texas, and later became the president of the company, a position he held until July, 1947, when he returned to Virginia as general manager of operations of Vepco.

•

Thomas L. Byrd has been appointed vice-president in charge of sales for the **Lau Blower Company**, of Dayton, Ohio. Expanding business in all phases of air handling equipment has created

Thomas L. Byrd

the need for this new executive office, reports **E. B. Lau**, president of the Lau company.

Mr. Byrd has been sales manager of the company since 1943, and before that he was a department manager in the Market Development Division of Armco Steel Corp.

•

The Line Material Company, Milwaukee, Wisc., has appointed **E. P. Elam** as the new apparatus engineer in their South-Central Division. He replaces **R. C. Kirk**, who has been promoted to the position of product sales manager of the company's Kyle Division.

Mr. Elam brings to the Line Material Company a wealth of electrical experience, having been associated with the industry for the past 20 years. He was formerly in the electrical operation department of the Tennessee Electric Power Company and, after the acquisition of that company by TVA, remained with them until joining Line Material. He is a graduate of the University of Tennessee where he received a BS degree in Electrical Engineering.

Mr. Elam joins the Line Material Company's nation-wide staff of apparatus engineers whose services supplement the work of L-M field engineers by assisting customers with their apparatus problems.

Pittsburgh Reflector Company has appointed **John G. Gaines & Company** of Kansas City, Mo., Permaflector engineers for Kansas and Western Missouri, according to **B. D. Levaur**, vice-president.

Heading the Company is John G. Gaines, who has been active in the

John G. Gaines

electrical industry in the Southwestern District for more than 30 years.

A native of New Orleans, Mr. Gaines joined the Public Service Company of Northern Illinois in Chicago in 1929. Since that time he has held executive positions with the Hurley Machine Company, General Electric, and Westinghouse. For the past five years he has been sales manager of the Continental Electric Company in Kansas City.

Mr. Gaines has offices in the Merchandise Mart, 2201 Grand Ave., Kansas City.

•

Charles B. Moyd is the newly appointed sales manager of the **McDonald Electric Company** which has warehouses in Miami, Fort Lauderdale, and West Palm Beach. Mr. Moyd had several years experience in the electrical appliance industry before joining the McDonald company.

•

Ward Leonard Electric Co., Mount Vernon, N. Y., has announced the recent appointment of **W. C. Schofield** as assistant sales manager. Mr. Schofield, who will assist **Frank E. Beede**, company sales manager, has been associated with Ward Leonard since 1948, directing sales in the Industrial Control Division.

Upon graduation in 1930 with an M.E. degree from the University of Maryland, Mr. Schofield completed the student course at Westinghouse Electric Corp. East Pittsburgh, and then was appointed Westinghouse sales engineer for the Washington, D. C., area, a position he retained for six years.

In 1938, Mr. Schofield established the Federal Engineering Co., Washington, D. C., a manufacturers agency.

NEW PRODUCT NEWS

Outdoor Service Center

A NEW outdoor service center that provides complete protection for the modern farm is available from the Westinghouse Electric Corporation, 306 Fourth Ave., Pittsburgh 30, Pa.

Consisting of heavy-duty F & K frame circuit breakers inside a weather-proof sheet steel enclosure, these control centers are adaptable for farmstead wiring where the meter and service control can be mounted on a yard pole. Where pole metering is not feasible, the centers can be mounted with the meter on the outside of a building.

The service centers are available in 70-, 90-, 100-, 125-, 200-, and 225-amp ratings at 125-250 volts a-c or d-c; 250 volts a-c three-wire, two-pole with neutral; 250 volts a-c, four-wire, three-pole with neutral, straight 120/ or three-pole for 250 volts a-c or d-c, or three-pole 230 volts a-c, 575 volts a-c. The F & K frame breakers provide instantaneous tripping on short circuits and full time delay on overloads.

There is ample wiring space in cutters at the top, sides, and bottom, and an insulated, groundable neutral is provided. The top of the cabinet is equipped with a hub that can be mounted so that it lines up with rubbed meter sockets.

•

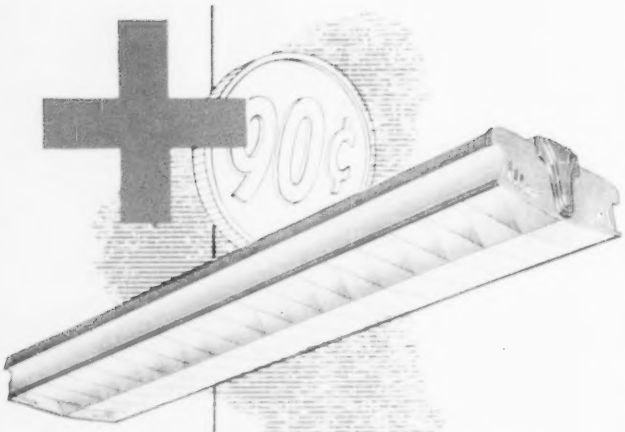
Gedney Conduit Bodies

As a NEW exclusive feature, all Gedney threaded conduit bodies, covers, strips and clamp backs are now produced with a heavy hot dip galvanized finish.

The new finish provides more zinc in a much thicker coat than ordinary electro-plating, thereby insuring ever-

lasting protection against deterioration. These new fittings offer outstanding advantages in all locations where humidity, exposure to weather, condensation or corrosive conditions exist. In such applications, they may be installed with assurance of lifetime service and appearance, the manufacturer reports.

For further details, write Gedney Electric Company, RKO Building, Radio City, New York.



FREEDOM FROM STARTER TROUBLES

for just 90 cents more

HERE'S YOUR CHOICE:

"old-fashioned" conventional ballast and No-Blink starters that would often require starter replacements

OR

fast-starting Guth Quickliter Ballast . . . and never again starter troubles; for only 90 cents more per 2-lamp, 4-ft. fixture. This is less than the cost of replacing a starter once.

Every Guth 40w fixture is available with Quickliter ballast. Instant Start lamp prices, lumen output, and life expectancy are virtually the same as those of regular 40w lamps. Don't you have enough headaches anyway? You can avoid at least this one and save your aspirin for others.

GUTH QUICKLITERS are featured in our catalog number 47-D Write for a copy today!

Guth LIGHTING

THE EDWIN F. GUTH COMPANY • ST. LOUIS 3, MISSOURI

Pylet Lighting Fixtures

The Pyle-National Company, 1334 North Kostner Avenue, Chicago 51, Illinois, announces the addition of a series of explosion-proof lighting fixtures and a series of dust-tight lighting fixtures to its extensive Pylet line of the most commonly used types of conduit fittings, supporting Pylets for lighting fixture mounting, switches and circuit breakers for hazardous locations.

Pyle-National LE Series, Explosion-Proof (Class I, Groups C and D) are for use in locations where highly flammable materials are manufactured or handled. (Example shown at left in illustration.)

Rugged, flame-tight cast aluminum alloy housings render internal explosions harmless, and insure safe operating temperatures. Threaded construction permits easy access to interior for wiring and lamp replacement. Available in many types and sizes.

Pyle-National DE Series, Dust-Tight (Class II, Groups E, F, G, and Class III) for use in locations where flammable dusts are present in quantity. (Example shown at right in illustration.)

Strong, one-piece cast aluminum alloy housings are designed to exclude dust from the interior and to avoid accumulation of dust on the exterior surface. Available in many types and sizes.

•

Automatic Transfer Mechanism

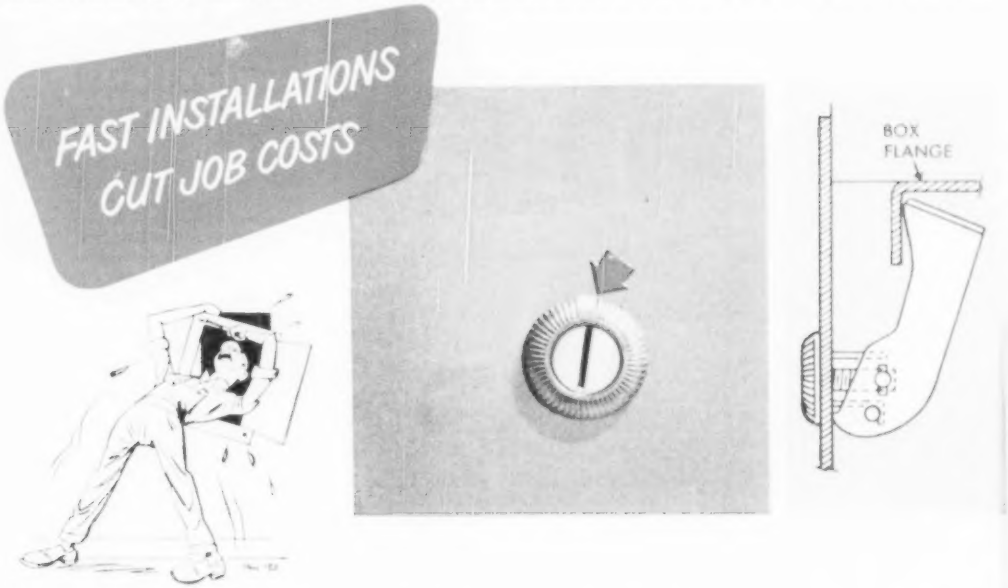
The G & W Electric Specialty Co., 7780 Dante Ave., Chicago 19, Ill., has recently developed a new selective automatic transfer mechanism for use with G & W Load Break Oil Switches.

The New Model E6 mechanism is for use with either a double throw switch or two single throw switches supplying one load from either of two feeders. With one feeder selected as "preferred" and the other as "emergency," the mechanism will automatically transfer the load from the "preferred" to the "emergency" upon failure of the "preferred" and back to "preferred" when that feeder is re-energized.

In addition to this fully automatic operation, the Model E6 mechanism provides the feature of operator selection from a remote location of which of the two feeders shall be the "preferred" and which shall be the "emer-

YOU CAN BE **SURE**.. IF IT'S

Westinghouse



Speed panelboard trim installations ...with INDICATING TRIM CLAMPS!

Indicating, adjustable trim clamps? Just a long name for a little device that enables you to install Westinghouse Panelboards *fast!*

A dial-type indicator on the outside of the trim or cabinet front eliminates the need for "x-ray eyes", or working by "feel". The dial shows when the clamp is in the proper position for tightening. A small detail, perhaps, but one that effects a substantial cut in panelboard installation time . . . one that you can measure in terms of dollars saved! Moreover, it's just one of many Westinghouse features that contributes to greater ease in installation. Check these additional "time savers":

Phase Identification on 3-phase, 4-wire lighting panelboards speeds up wiring by eliminating the necessity for "ringing out."

Quick-fasten access plates to slash panelboard assembly time.

Taken separately, these are little things, of course. But collectively they make a big difference in final panelboard costs . . . a difference that will enable you to buy quality-constructed panelboards for every job. And you can be *sure* about quality if it's Westinghouse.

Descriptive Bulletin 50-950 contains complete details. For your copy, write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania.

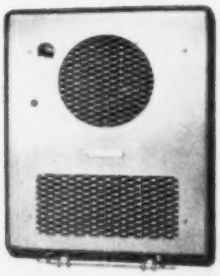
J-40187

Westinghouse
PANELBOARDS

Only an ELECTROMODE

AUTOMATIC, ELECTRIC DOWN-FLO WALL HEATER

Has All These Features!



1. Patented, Cast Aluminum Extreme-Heating Element. Noted for years. Won't burn out.
2. World's Safest Construction! With its low operating temperature, you can touch the element without danger of shock or burn!
3. 100% Automatic Safety Switch! Can not restart if air flow is stopped. No danger of fire!
4. 600 to 1150 Square Inches of Heating Surface (depending on size of unit).
5. Down Flo Heat Distribution. An adjustable in or out of heater, warmed, then forced and so free to be greatly cooler. Electromode heat most circulate walls or floor, don't scorch, don't cause dirt on furniture or furnishing.
6. 125 to 160 Cubic Feet of Fan-Circulated Heat Per Minute, depending upon size.
7. New Hydraulic Pressure Type Thermostat! Maintains any desired room temperature from 55° to 85°.
8. Thermostat Built Into Heater. So located that it is unaffected by heater temperature. Operates instantly and accurately.
9. Noiseless, Shaded-Pole, Non-Radio-Interfering, Factory Sealed Motor. Never overheating. Guaranteed for long, continuous service.
10. Stylish, Heavy-Gauge, Enamelled, Steel Front Plate. Finished in beautiful ebony gray.
11. Approved by Underwriters' Laboratories and Canadian Standards Association.

Electromode Automatic Down-Flo Wall Heaters are available at 120 or 240 volts and in 1500, 2000, 3000 and 4000 watt capacities. Non automatic models also available. Front plate 17" wide, 21" high. Extends 8" from the wall. Wall box is 5⅝" deep and fits between stud and studding.

AUTOMATIC WALL-TYPE BATHROOM HEATER

These heaters are perfect for bathrooms, bedrooms, kitchens, den, dinette—or any small room. They have all the Electromode safety features listed above. Available in white or chrome finish. Delivers 1320 watts at 110 volts. 4505 B.T.U. Non automatic models also available.

Electromode saves a full "line of sight" for Interior Decorators, Home Builders, Realtors and Architects. Electromode heaters are normally advertised and available through leading electrical distributors.

ELECTROMODE *all-Electric* **HEATERS**

FREE CATALOGS!

ELECTROMODE CORPORATION, DEPT. ES-90
45 Grouch St., Rochester 3, N. Y.

Please send Electromode Wall and Floor Heater catalogs together with full technical information.

NAME
TITLE
ADDRESS
YOUR WHOLESALER

gency." This new feature allows the operator to transfer load at will between the two feeders to balance feeders during periods of peak demand or to isolate one feeder for repairs or routine maintenance.

•

Water Heater Control

A SYNCHRONOUS motor driven time switch for electric water heater control, designed for easy installation at minimum cost, has been announced by the Sangamo Electric Company, Springfield, Illinois.

The new time switch, designated Type MN, is furnished with a nipple and collar for mounting on a ¾ inch knockout on meter service cabinets. 18 inch leads are furnished with lug connectors on the line side. "On" and "off" operations are performed on a repetitive schedule only, with an interval of one and one-quarter hours between successive operations.

This switch, the lowest priced of the Sangamo standard M line, is equipped with a hysteresis synchronous type, silicone-lubricated timing motor. It is provided with one "on" and one "off" lever, but additional levers can be attached.

•

Plug-in Control Center

"PLUG-IN" UNITS, new safety handle mechanisms, new circuit breakers, new starters, and new switches are incorporated in a complete new control center design announced by Square D Company, Milwaukee, Wisc.

An important feature of the new design is the ability to accommodate control for a greater number of motors in the same space. Up to six Size 1 or 2 starters can be mounted in a stand-ard vertical section 20 inches wide by 20 inches deep by 90 inches high.

Plug-In units have positive pressure stabs which grip round vertical busses. Units slide on corner guide rails to

Here's a *COMPLETE* line of *COMPLETE* quality, by Day-Brite . . . your assurance of *Premium* quality without *Premium* cost. Yes, all of these handsome Day-Brite fixtures have been carefully engineered for today's contractor. Self-bushed wire feed holes . . . plenty of knockouts . . . rigid construction make Day-Brite fixtures easy to install and efficiently trouble-free for years.

Whether you prefer Slimline lighting or Standard fluorescent, you will find a Day-Brite fixture to meet your commercial and industrial requirements. See all of the top quality Day-Brite fixtures before you decide. Write for your copy of the Day-Brite catalog TODAY.

"DECIDEDLY BETTER"
DAY-BRITE
Lighting Fixtures

Day-Brite Lighting, Inc., 5410 Bulwer Avenue, St. Louis 7, Missouri
In Canada: Amalgamated Electric Corp., Ltd., Toronto & Ottawa

042

PREMIUM QUALITY WITHOUT PREMIUM COST

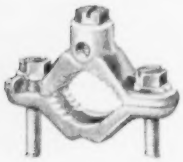
make removal or exchange quick and easy.

A safety handle mechanism provides for as many as four padlocks to lock both door and disconnect in either "On" or "Off" position. On closing the unit door, the handle moves to indicate true position of the disconnect.

•

Sherman Ground Clamp

An improved type of ground clamp which fits either water pipe or ground rod, is now being produced by the H. B. Sherman Mfg. Co., Battle Creek, Mich. With this clamp, it is claimed



that the electrician no longer need carry several different types and sizes of ground fittings, and can therefore save money by reducing inventory.

The new clamp, known as the "Sherman GF13-B," resembles the conventional type, but has a specially shaped bottom section which may be installed either side up, thus adapting it to a wide range of pipe and rod diameters. Ground connections may be made to pipe ranging from ¼" to 1" diameter, and likewise to rods from ⅝" to 1" diameter.

The GF-13-B is made of heavy cast bronze, recommended for use on copper pipe, as well as galvanized pipe or iron rods. It is low in cost, permitting its use for all types of electrical grounding.

•

Open-Dropout Cutout

Two new 100-ampere open-dropout cutouts with heavy-duty interrupting ratings of 5000 amperes have been announced by the General Electric Company's Transformer and Allied Product Divisions, Pittsfield, Mass.

Available in 5.2 and 7.8 kv maximum ratings, the new units supplement a line of 100-ampere open-type cutouts having the NEMA Standard interrupting rating of 2000 amperes.

Standard G-E 5.2 and 7.8 kv open-dropout cutouts already in service can be converted to heavy-duty cutouts by simply replacing the standard fuseholder with the new interchangeable heavy-duty fuseholders. Where increased station capacity requires cutout of higher interrupting ratings, savings can be obtained by replacing only the fuseholder instead of the entire cutout.

The light tan color of the fuseholder indicates that it is a heavy-duty cutout. Fully tested to assure successful interruption of all fault currents within their rating, the new cutouts feature close coupling of the fuseholder and insulator to reduce recoil stresses on the porcelain, and a fuse holder sealed at the upper end to prevent power arcs and flashover. Two rubber bumpers and a coil spring prevent shock from being transmitted to the porcelain.

Because the mounting bracket is cemented into the porcelain on the opposite side from the live parts, birds and animals are prevented from "bridging" the insulator and blowing fuses. A time delay of 5 or 6 cycles for contact-separation eliminates arcing at the contacts, which are silver plated to prevent corrosion.

•

Meter Test Switch

The Eastern Specialty Co., Philadelphia, Pa., has developed a potential switch that is a special form of the well-known snap action Micro Switch, modified to suit the requirements of manual control of rotating standard potential.

The new Tesco potential switch has several outstanding features. The ex-

Only KILLARK Offers a Complete Line of Fittings and Fixtures in NON-CORROSIBLE ALUMALLOY

Outstanding advantages never before available are now offered in new Killark Alumalloy Fittings and Fixtures . . . thoroughly tested and approved in the field. They're lighter than iron . . . resistant to chemical corrosion . . . burr-free in smoothness for greater safety . . . clean-cut threads for easier installation. Whatever your needs . . . depend on the complete Killark all-purpose line.

- ENTRANCE FITTINGS
- CONDUIT BODIES
- FLUSH SWITCH FITTINGS
- EXPLOSION PROOF FITTINGS
- VAPOR-TIGHT LIGHT FIXTURES
- EXPLOSION PROOF LIGHT FIXTURES
- SEALED BEAM FIXTURES

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Killark
ELECTRIC MANUFACTURING COMPANY
Vandeventer and Easton Aves. St. Louis 13, Mo.

Completely Re-Engineered

FRONT OPERATED TOGGLE

Service Entrance Equipment

SNAP-ACTION; TOGGLE ACTUATED

CAN BE SEALED WITH PADLOCK IN EITHER ON OR OFF POSITION

UNDERWRITERS' LABORATORIES APPROVED

SEALABLE DOOR

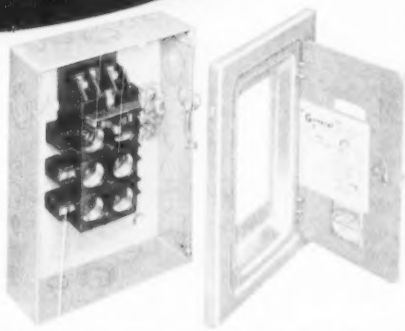
PACKED IN INDIVIDUAL CARTONS

SEALABLE TRIM

HINGED TRIM AND SINGLE FASTENING SCREW ON SURFACE TYPE

ATTRACTIVE GRAY BAKED ENAMEL FINISH

Cat. No. 63324



Generals new Front Operated Toggle Service Entrance Equipment has been completely redesigned to incorporate the very latest engineering features.

The unit shown above is Cat. No. 63324 which is a 30 amp. 3 wire, 2 main fuse front operated toggle switch controlling four plug fuse branch circuits. Other types of 30 amp. combinations are available—fused or unfused mains—2 or 3 wire service—up to six branch circuits—*flush or surface.*

For further details see page 20, Cat. 4309-A—write for your copy today.

Available exclusively through wholesalers.

Cat. No. 633NP

Solderless pressure wire connectors on line side • Dependable full-floating contacts • All bakelite unit • Will accommodate non-tamperable fuses • Insulated neutral (bonding screw furnished for grounding) • Ample wiring room and abundant knockouts.

Also available—
Front operated toggle, plug fused safety switches

General Switch Corp.

49 Roebling Street Brooklyn 11, N. Y.

One of the largest Manufacturers of:

SERVICE EQUIPMENT . . .
Pullout, Front Operated Toggle and Side Operated types. Indoor—surface or flush, and Outdoor

SAFETY SWITCHES . . .
30 through 1200 Amp., 250V and 600V Type A, C and D. Indoor and outdoor, HP rated

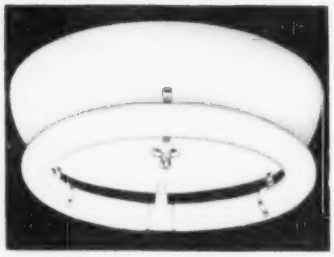
ELECTRICAL DISTRIBUTION EQUIPMENT

SALES OFFICES IN EVERY MAJOR CITY

2 Great Fixture Series

TO HELP UP YOUR PROFITS IN 1950

COMPCO INSTANT START CIRCLINE WORKS IN ANY TYPE AC SERVICE



Here's a CIRCLINE you can install anywhere, and be positive it will work; will light up instantly without falter or flicker. No starters to replace. Modern . . . and beautifully designed, you can recommend COMPCO CIRCLINE for any decorative scheme in home, office, or institution.

COMPCO STREAMLINED STRIP-LIGHTS ARE EFFICIENT AND LOW IN COST

BODY-WIRED TO SAVE INSTALLATION TIME

All wiring, sockets and ballasts are fastened to the strip-light body. No wiring on cover. Saves installation and maintenance time.

There are no better fixtures for all round utility than these newest COMPCO STRIP-LIGHTS. No matter what the installation calls for . . . walls, ceilings . . . flush or suspension mount, singly or in continuous rows . . . these strip lights are your answer to high efficiency lighting at low cost. You can get them in equally beautiful one or two-light models.

EXTRA COMPCO QUALITY AT NO EXTRA COST

You can't see it here, but once you lay your eyes on a COMPCO *fixture you'll see what we mean by* EXTRA COMPCO QUALITY. *It's there in the attention to fabricating details, in the hardware, in the wiring, in the nationally known and recognized components. Yes, important too, is the integrity of a company that backs up its products with a rock-bound guarantee of performance. And, you'll buy* COMPCO *products at competitive prices.* WRITE FOR OUR CATALOG AND SEE.

COMPCO CORPORATION

For the Finest in Fluorescent Fixtures

2251 ST. PAUL AVE., CHICAGO 47

Compco

tremely low pressure of about six ounces is required to operate it; the total push button travel is less than 3/32". Large silver contacts rated at 10 amperes, 240 volts a.c., responds instantly to the lightest pressure; under normal conditions its life expectancy should be 5,000,000 to 10,000,000 operations.

A complete assembly in itself, the Tesen potential switch is in turn housed in an attractive plastic protective case. This makes the construction dust-proof and well protected against mechanical injury.

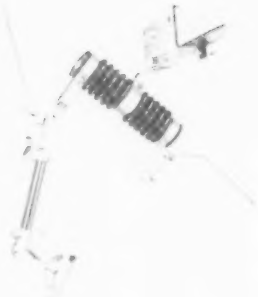
•

Chance Cutout

A new design of the Type KM "Kick-Out" Cutout is now made by the A. B. Chance Co., Centralia, Mo.

Recommended for distribution systems where interrupting capacity up to 2,000 amperes is required, this cutout tells at a glance whether it has been opened as a disconnect or by a protective operation.

If the fuse tube is hanging from the lower contact housing, the cutout has



been operated manually. If it is hanging from the upper housing, the fuse tube has been blown.

All current parts of the top and bottom of the cutout assembly are silver-plated for low resistance. When the fuse tube closes, the lever and all the fuse tube contacts, both the junction and contacts, are fully energized for the closed seal. This type of operation prevents moisture from entering the fuse tube and thereby has to date assured for the fuse tube life.

When the fuse tube is moved into closed position, the fuse link is not subjected to shock or additional tension which might cause failure.

•

Ward Leonard Dimmers

Ward Leonard Electric Co., Mount Vernon, N. Y., announces the development of their new Bulletin 76 Rheostat Dimmers for lighting control purposes in theatres, auditoriums, churches, col-

leges, schools, etc. Although designed primarily for lamp dimming, Radiastats are also suitable for industrial or laboratory use where a-c voltage applied to the load must be adjustable.

Essentially a core type autotransformer, providing smooth flickerless control, the new Radiastats can control any lamp load from 5 watts minimum up to maximum rated wattage. They are available in two sizes, 13" and 15½" diameter with maximum load ratings of 5500 and 8000 watts respectively on 110-120 volt, 50-60 cycle service.

Outstanding features include compact maintenance-free construction, circular metal base plate, toroidal coil and core, large solid brass contacts, multiple silver-graphite slide, silless center bearings, low core loss and protection against excessive circulating currents.

Radiastats can be manually or remote controlled motor operated. They can also be furnished in all types of mountings and frameworks.

Notes on the Code

(Continued from page 46)

No. 4 and larger. This also applies to service entrance conductors.

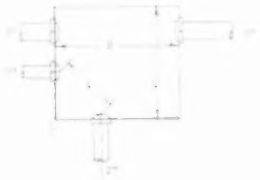
Gasoline Pumps—Section 5142.

(1) Lead covered cable in conduit is the only type wiring approved for gasoline dispensing pumps. (Section 5142-d)

(2) Seal off fittings poured with compound are required on all circuits entering equipment on dispensing island, as required by Section 5142-e.

(3) Switch controlling pumps (usually located in station) shall be of a type that breaks each conductor, as required by Section 5142-e.

Pull and Junction Boxes—Section 3708.

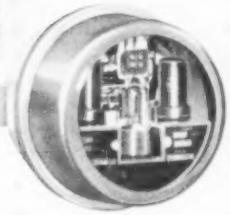


The distance A must be a minimum of 12" as required by subparagraph 2 of Section 3708. By calculation or by scale drawing it is found that the distance from corner X to the center lines of the 2" conduits must be at least 8½"

Fisher-Pierce Photoelectric Controls

CUT COSTS

STREET LIGHTING



Fisher-Pierce Photoelectric lighting Controls have a continuous record of low-cost service by more than 600 electric utilities in more than 17,000 installations.

Fisher-Pierce should be on *your* "Standards" list. Controls for examination and test can be shipped immediately from stock.

Approved by street lighting engineers and maintenance men throughout the world, Fisher-Pierce units offer a simplified Photoelectric relay for control of multiple or series street lighting systems. Fisher-Pierce controls give you long tube life (20,000 hours or more), easy servicing, (plug-in chassis construction), *no resetting after power interruptions*. In other words, exceptionally *low maintenance costs*.

Series 6100 5 Amp. Contacts

Models available for direct-connected lamp loads up to 3000 watts, for pilot-wire relay systems, and oil-switch controls for series systems.

Ask for Bulletin 63300

The FISHER-PIERCE COMPANY, INC.

59 CEYLON ST., BOSTON 21, MASSACHUSETTS

(We are assuming these distances to be equal.)

The distance C must be a minimum of 20" as required by subparagraph 2 of Section 3708.

The distance B shall be a minimum of 24" as required by subparagraph 1 of Section 3708 and the size box required would be 20 by 24 inches.

Insulating or Fiber Bushings—Section 3736-b.

Required where ungrounded conductors of No. 4 or larger size are deflected more than 30° where entering a raceway in a cabinet pull box, junction box or auxiliary gutter.

Electric Heat

(Continued from page 43)

ceiling requires highly skilled workmen. A contractor who obtains a franchise for installing this system is carefully investigated as to ability and experience. He must refuse to install the cable in any home under construction unless he gets the entire wiring job. If his jobs show inferior workmanship and don't operate satisfactorily, his franchise is taken from him.

The curbstone operators have taken over a huge portion of the residential business in Nashville, but since Shannon took on electric heat his most profitable business is the wiring and heating of homes. So far, he has promoted this business more in homes than in commercial buildings because of the lower electric rate, although it has been found to pay in some of the latter.

He is also doing all of his early promotion in new homes to be constructed, rather than old houses; partly because all new homes are being well insulated in the building, and partly because he can install it at a much lower price. Old residences will come later but in old homes the ceiling and wall surfaces have to be stripped down and done over, which adds to the cost.

Cable heat is installed by looping the cable back and forth all the way across the ceiling, leaving about 2 inches between the rows. The cable is fastened with staples. If the ceiling itself will not hold enough cable to insure sufficient heat, the looping is continued down the sidewall until the required amount is applied. After it is stapled down, the cable is plastered over. This means that none of the heat is in sight except the thermostat. Then, all you have to do is set the temperature at the desired point, and the house is warm for the rest of the winter.

The contractor has an endless number of selling points to break down sales resistance: a heating system with no work, no shoveling, no dirt, no smudge, and no polluted atmosphere from your chimney; a twist of the switch will turn several cubic feet of icy atmosphere into 70 degrees of cozy comfort until a balmy spring takes over the job!

The most telling sales appeal, however, is the fact that the average new home under construction can ordinarily install this system just as cheaply as any other central heating. Considering the fact that this system does not require a basement it can be done for much less, unless a basement is demanded anyway.

Mr. Shannon says that the installation price varies from $100 to $125 a room, or $500 to $700 for a 5-room house, although, of course, the cost has to be figured according to the size of rooms and kind of house.

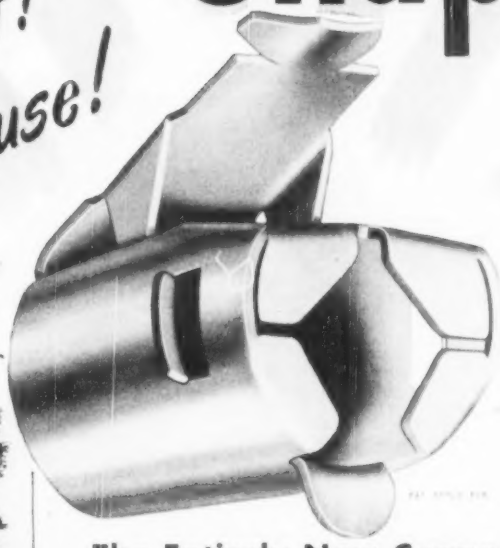
In the Seattle area for 1945, a fairly good estimate of operating costs was secured from the power companies. The bills for Seattle homes that were electric cable heated showed an average total power consumption of 2.56 kilowatt-hours per cubic foot of house volume for the year. These were total bills, including lights, range, and water heaters as well as space heating in each case.

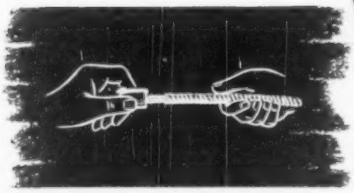
There is one fear expressed by many prospective users and by some contractors who do not yet understand the system. They say if any trouble should develop with such a vast network of wiring a lot of plastering and wall finishing would have to be torn out to locate the sore spot. Mr.

DUNCAN ELECTRIC MFG. CO. LAFAYETTE, INDIANA

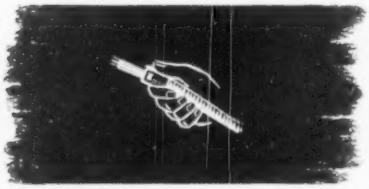
SnapX

It's New!
It's Different!
It's Easier to use!

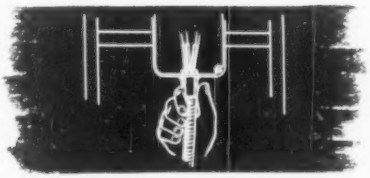




INSERT cable in **SNAPX** connector.



COMPRESS spring clip that holds cable.

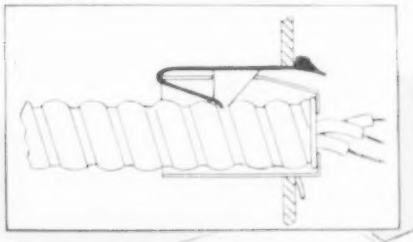


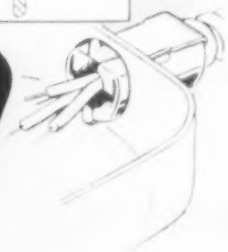
SNAP IN to box knockout and the cable is set — the job done!

The Entirely New Connectors For Armored and Non-Metallic Cable That You Just Snap Into Place!

SNAPX is the new cable connector that is installed without tools. There are no nuts or screws to tighten. Just compress, snap it in place and it's set.

To try it is to buy it. See how easy SNAPX is to use! Write today for your free sample, giving the name and address of your electrical wholesaler.



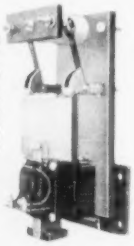


BRIEGEL METHOD TOOL CO.
GALVA, • ILLINOIS

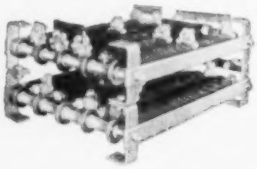
SnapX Fittings for 2-12 and 3-12, 2-14 and 3-14 armored, and 3-12 and 3-14 non-metallic cable carry the underwriters seal of approval.

LOOK TO Monitor for QUALITY MOTOR CONTROLS

MONITOR has been a pioneer in the manufacture of motor controls since 1888. MONITOR Controls have proved their dependability by rendering long years of uninterrupted service in scores of installations all over the country. That's the reason that MONITOR rates high with men who know what a big difference modern, advanced design of motor control equipment can make in operating costs.



High Voltage High Frequency Contactors designed primarily for high frequency switching from a remote control point. Can be used with any high voltage cold break application—A.C. or D.C.



Resistors — Edgewound, Hexwound and Smoothwound types.

The MONITOR CONTROLLER CO.
Braintree 84, Mass.

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722 M. & M. Building
Houston 2, Texas

Shannon says this fear is entirely groundless.

In the first place, he reports, the cable is so well made and insulated nothing can happen to it if properly applied. The only way a break could occur, he thinks, is to drive a fastening staple into it far more deeply than the fastening-down process requires. But if a break should occur, it would not be a calamity. The manufacturers have a testing system that soon locates it through the plaster. When spotted, a small hole cut in the plaster and a splicing and taping of the wire, fixes it with little time and effort. Of the 100 homes he has heated, Shannon has had only one complaint.

In a house with concrete floor the cable is embedded in both ceiling and concrete.

Poultrymen are using it in brooder houses. Mr. Shannon installed cable heat in the brooder houses of a nearby producer who raises several thousand chicks at a time. He also has a contract to install it in a large poultry plant at the A & I College, in Nashville.

The brooder house has a concrete floor in which the cable is embedded. With a heated floor, the chicks require far less brooder heat and in some cases get along without brooders at all. These experiences indicate that the poultrymen should be live prospects for this new system. If current should happen to go off in concrete embedded cable, the floor continues warm enough for all practical purposes for about four more hours.

The cost of operating this system in Nashville and on the West Coast has been surprisingly light. In one Nashville home with 1860 square feet of floor space—the equivalent of 7 or 8 average rooms—the highest monthly bill for electricity during the past winter was only $34, both for heating and all electric appliances on the load. In another it was $39.20.

After taking off all other uses, the net bill for heat would compare with about $14 for stoker coal, $10 a ton for lump coal, and 10 cents a gallon for oil. Mr. Shannon says that many 5-room residences in this area heat through 7 months of cold or chilly weather for $80 to $100 a year. There are mighty few furnace-fired homes of equivalent type that are doing it any cheaper with coal.

Another advantage the cable method has over oil, coal or gas is the cost of upkeep. In the rival systems, furnaces have to be repaired, the conveying hot air or hot water pipes need reworking. There are no leaking radiators, steam, or water lines to ruin plaster or floors; or smoke leaks, as in a hot air system. This is all good ammunition the contractor can use to break down sales resistance.

Another promising field of promotion is the use of cable in heating hotbeds, greenhouses, water troughs, water pipes, etc., as well as residences.

So far there are about 1,000 radiant-heated homes on the West Coast and 1,000 more scattered over the country.

Responsibility

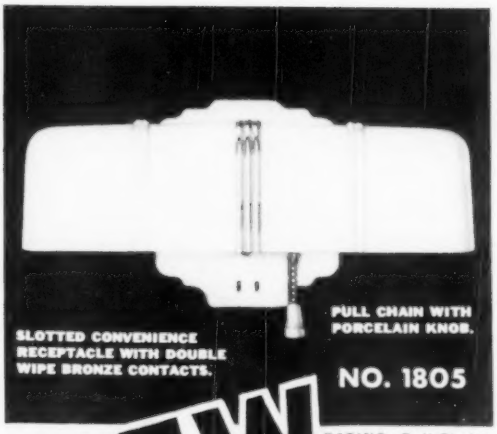
(Continued from page 41)

of my electricians," says the contractor, "I would be blinded to the over-all view of the business by a forest of details."

When you watch and talk with an M & A electrician while he is on the job, you get the impression that he is doing more than installing a junction box or running wires. His bearing and his conversation sift down to one thought that says, "My company's standing as a reliable firm depends on the kind of job I do as an electrician."

Morrow doesn't drape responsibility on a man's shoulders as soon as he is on the payroll. Only after he has judged a worker worthy of responsibility does he bestow it, and no man stays in the organization that doesn't measure up. Morrow employs only the man he feels can carry a job to its finish without supervision. He keeps only those who prove his first appraisal to be correct.

But Morrow is not a stern employer. On the contrary, he is admired by his employees for his fairness, understanding and easy



NEW

RATING: Pull Chain-250W 250V.; Keyless-660W 250V. Convenience Outlet 15A-125V or 10A-250V.

PAULDING WALL BRACKET FIXTURE . . WITH CONVENIENCE OUTLET

PAULDING NO. 1805 MOLDED PORCELAIN WALL BRACKET UNIT WITH CONVENIENCE OUTLET.

Completely wired and equipped with opaque glass shade and cadmium plated mounting strap for 3½" and 4" outlet box or Gem X Box. Base 5½" x 5". Sockets take two 60-W bulbs. Glass Shade 11¼" long, 3¼" wide, 1¼" high.

PAULDING

PORCELAIN PRODUCTS

are the best money can buy . . . regardless of price. The quality of interior parts and working mechanisms is proved by the fact that they stay working on the job long after others fail.

THE NEW PAULDING UNIT shown here meets a great and growing demand from Wholesalers, Contractors and Retailers everywhere. No. 1805 is ideal for residential, commercial or industrial installation in bathrooms, lavatories, over kitchen sinks, wash tubs, work benches, counters, tables, etc. Recommended for use wherever directed light and an extra outlet are required from the same box.

PAULDING OFFERS 4 TYPES of the fixture shown.

1805 — Pull Chain with Convenience Outlet.

1806 — Keyless with Convenience Outlet.

1807 — Pull Chain, No Outlet.

1808 — Keyless, No Outlet.

and Pull Chain Replacement Socket.

Quality construction throughout. Approved by Underwriters Laboratories. Sold only through recognized channels.

Send for Catalog and see the entire Paulding line of wiring devices and Kaolite fixtures.

UNSURPASSED QUALITY . . . AT A COMPETITIVE PRICE

JOHN I. PAULDING, INC.
NEW BEDFORD, MASSACHUSETTS

QUALITY SERVICE SATISFACTION

"MY FIRST CUSTOMER IS STILL MY FRIEND"

says John B. Rossi
Rossi's Southern Electric Co.
11608 S. Michigan Ave.
Chicago 28, Ill.
—another successful seller of American Blower Ventilating Equipment

"Thanks to the good workmanship, good service and good American Blower equipment that I supplied to my first customer, he's still a good friend of mine and a good customer, too," says John B. Rossi.

"You can't beat this combination for building a ventilating business and profits.

"You can't beat American Blower Products, either. They're recognized top quality products, easy to install, and accurately rated. They operate better, and save power costs, too! I know, because I've been selling and installing American Blower equipment for many years."

If you want to build a profitable ventilating business, why not build it by selling equipment of proved quality? Phone the nearest American Blower Branch Office for details.

AMERICAN BLOWER CORPORATION, DETROIT-32, MICH.
CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONTARIO

Division American Radiator & Standard Sanitary Corporation

Model C Ventura Attic Fans—Built in capacities up to 21,500 cfm for either vertical or horizontal operation. Low power consumption, quiet operation.

Utility Sets—Use to supply air exhaust laboratories, schools, etc. Have Adcom Control for regulation of air flow. Capacities from 417 to 17,924 cfm and by "SI".

Model A Ventura Fans—Smartly styled. No exposed wiring. Smooth, easy-to-clean surfaces. Built in capacities from 1000 to 9500 cfm for delivery 12 sizes.

SELL QUALITY!

AMERICAN BLOWER

Air Handling Equipment

Serving home and industry AMERICAN-STANDARD • AMERICAN BLOWER
CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

humor. It is a rare year during which he has to dismiss an employee. The contractor tells the story of one such employee who had to be dismissed for attempting to conceal a blunder.

"The electrician had been sent out on a commercial job which required much of the wiring to be done in the cement floor. The electrician, however, failed to get the conduit stopped up before the concrete was poured. I knew nothing of the matter until trouble developed in threading wire through the conduit. Up to that time the electrician had said nothing to me about his mistake. But when I confronted him, he admitted that he had allowed the concrete man to rush him so that the floor was poured before he remembered to seal off the conduit. I had to dismiss him—not for his mistake, but because he didn't say anything about his blunder until he had to. I can forgive mistakes, but lack of good faith is inexcusable."

The characteristics of a responsible employee may, according to Morrow, be summed up as follows:

1. He adheres to a standard of workmanship that goes beyond minimum requirements.

2. He requires little supervision.

3. He places the welfare of his company above personal considerations.

Southern IAEI

(Continued from page 44)

the Code panels, and several special committees.

Included on Monday's program will be a discussion of "Watts in Glass," presented by the Owens-Corning Fiberglas Corp.; "Pressure Switches as Service Switches," by E. C. Soares, Industrial Engineering Services, New York; and "Electrostatic Finishing Processes," by Ransburg Electro-Coating Corp., Indianapolis.

E. H. Alexander, General Electric Co., will address the Tuesday morning session on "Electrical Inspection of Industrial Control Installations." Also to be heard on the Tuesday program will be T. P. Branch, of REA, Washington, on "Rural Electrification Administration"; "It's a Snap," by H. C. Biglin, Atlanta; and "Low Voltage Temperature Control Wiring," by C. W. Nessell, Minneapolis-Honeywell Co., Minneapolis.

The Wednesday morning session will be devoted almost entirely to Code discussions, and the concluding session Wednesday afternoon will include reports of special committees and the election and installation of officers.

Protect Wiring

(Continued from page 39)

$4.50, costs but little more than $2 each in lots of 100, and is included in a wiring contract at the installed price of $5. Where they must be installed after the wiring is in, Mr. Crane makes a flat price of $10. Most of these installations are made as a result of service calls which could have been prevented if the service had been properly protected.

In the rural territory served by the White Crane Electric Co., voltage surges from all causes including lightning were doing a varied array of damage. Pumps were particularly vulnerable to over voltages caused from lightning since they were usually close to the ground. Poultry producers use a large number of small relays and automatic timing devices to turn lights on and off at pre-set times. Heaters and incubators are automatically controlled and over-voltage usually played havoc by knocking them out in the night hours and thus resulting in other damage besides the electrical controls.

Electric water heaters using immersion units were often damaged on rural circuits because the current surge would jump across the gap in the two sides of the heating element and make a path for the regular current to follow, rendering the unit useless.

Many times the lightning riding the circuits would be enough to damage the electric meter.

Electric clocks and in particu-

lar electric clocks and their associated mechanism on electric ranges were also susceptible to breakdown under heavy voltage surges.

Mr. Crane has found that no customer who has had to call an electrician to survey the damage and replace the damaged parts will ever fail to buy a service protector. Consequently they are not only stocked in his storeroom but all of his service trucks are carrying a supply and every customer is being asked to buy.

Here are some of the details on the pellet type of protector used on 115-230-volt secondary services. It can be applied on either side of the meter but if applied to the line side has the additional value of protecting the meter. This has an advantage also for the contractor who has to install one with the contract wiring.

If he finishes the wiring job before the power company connects the service he can put the pellet service protector in place (only one screw) and leaves the three wires dangling, certain that the power company will be glad to make the connections when it makes the service connection since it protects their meter as well as all of the appliances in the house.

The usual place for mounting is near the service weather-head on the outside of the house. Connections consist of three No. 10 wires, with flameproof and weather resistant insulation. The two outside wires connect to the line and the center to the ground. The markings are on the case. The case and the small mounting bracket are of galvanized steel.

Technically the pellet type of protector for house circuits is the same type as arrestors used on high voltage lines in primary distribution circuits. Its outstanding advantage is in the value action of the arrestor through the use of granular material, which prevents the flow of power current after the impulse has been discharged harmlessly through the ground. This prevents the

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for safety
IN HAZARDOUS LOCATIONS

EXPLOSION PROOF
Pyle National LE Series: Class I, C and D

For use in locations where highly flammable materials are manufactured or handled.

Rugged, three-light cast aluminum alloy housings render internal explosions harmless, and insure safe operating temperatures. Threaded construction permits easy access to interior for wiring and lamp replacement. Available in many types and sizes.

DUST-TIGHT
Pyle National DE Series: Class II, Groups, E, F and G

For use in locations where flammable dusts are present in quantity.

Strong, one-piece cast aluminum alloy housings are designed to exclude dust from the interior and to avoid accumulation of dust on the external surface. Available in many types and sizes.

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PLUGS AND RECEPTACLES · FLOODLIGHTS · CONDUIT FITTINGS

development of short circuits or arcs.

It drains the over-voltage to the ground whether it is small or large and does not allow the regular line voltage to follow.

From the contractor's standpoint, Mr. Crane said one of the hardest things is to remember to mention it to the customer when the contract details are being discussed. This is being remedied, however, by making the entire crew service protector conscious and by forming the habit of asking every customer to have one installed to prevent service call expense.

Damage from surges and lightning in this area is seasonal. When the spring rains start, the accompanying thunderstorms usually spray the rural and small-town lines with plenty of stray voltages. Lines are equipped with protectors to keep the surge current out of the transformers and so much of it rides down the lines to the nearest interior wiring installation seeking a way to the ground.

Service calls on new and old wiring from burn-outs, flash-overs, and non-operating equipment due to abnormal voltages, are grouped in four or five spring and summer months, according to a check Mr. Crane has made of his records for several years back.

It was this checkup that led to the belief that most of the trouble was due to line surges rather than defective equipment and faulty wiring.

"The customer is not interested too much in the technical construction of the lightning arrestor," Mr. Crane said, "but he wonders why when he has bought new wiring and new appliances that they do not give him better service. He naturally blames much of his trouble on either the manufacturer or the contractor, or both. Consequently it is a definite part of the contractor's obligation to sell the customer the protection that he needs, especially when this protection costs so little."

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Class 1, Groups C & D

Meet ALL Standards PLUS

SCIENTIFICALLY DESIGNED REFLECTORS with highest reflection factors.

STANDARD SIZE CONDUIT BASE common to all fixture sizes permitting a variety of outlets.

EASY FIELD CHANGES with interchangeable reflector globe assemblies—no wiring changes necessary.

SIZES 100 to 500 Watts.

COMPLETE LINE of waterproof type for outdoor and moist locations.

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RUSSELL & STOLL COMPANY, INC.
Precision-Built Electrical Equipment
125 BARCLAY STREET, NEW YORK 7, N. Y.
SINCE 1902

Maintenance

(Continued from page 38)

it with the arms loaded with lamps and cleaning material is somewhat hazardous.

The availability of long ladders is in itself a problem, and in many cases has been solved only by turning to the fire department. When these uninitiated people enter these areas with their ladders, many times the ornate plaster suffers permanent damage.

Another solution to this type location where the ceiling is flat or slightly vaulted is the installation of flush light boxes. They are very acceptable from the design standpoint, as they are practically neutral in design influence. Many times, with careful planning they may be fitted in an existing ceiling pattern or simulate skylights.

It is a very simple matter to plan the construction of these units so that they can be serviced from above the ceiling. Then it is only necessary to gain access to the attic space and provide a narrow catwalk to each lighting unit. No ladders are needed with this arrangement, as all the servicing may be completed from a comfortable kneeling position. This solution has found much favor of late and is completely effective.

Many methods have been developed for ease of maintenance in industry, the location with the worst problem from an access standpoint being the typical high bay area. Where a crane is available, the fixtures may be mounted on a hook arrangement with the electrical connection being made by means of a plug and receptacle. The fixture may be disconnected and serviced in the comparative safety of the top of the crane, and the crane operator may move on to do his regular work while the cleaning is done.

Where no crane is available in some industrial high bay jobs or in high ceilinged gymnasiums, a disconnect hanger is recommended. This device locks the lighting fixture to the conduit both mechanically and electrically and is operated from the floor through a cable that may run up the wall and out the ceiling through a conduit. A sharp jerk on this cable

will release the unit from its hanger, and it can then be lowered to the floor for servicing.

Another method is to mount the units on the lateral trusses and then they can be reached either from a catwalk or a double extension ladder resting against the truss. In those plants where the ceilings are high and the work demands a high level of illumination as derived from continuous rows of fixtures, the catwalk has been found to be essential. Access is facilitated and safety is assured.

In offices, schools, and other low-ceiling areas, the design of the fixture is important, as outlined before, and a definite maintenance schedule should be set up. The use of the closed bottom troffer is very effective in keeping the initial efficiency high over a long period of time. The choice of the source deserves critical attention for it requires just as much work and expense to replace a starter as it does a burned-out lamp.

In the present market, probably the cheapest item of expense in the maintenance schedule is lamps. The amount of light and the hours of life have increased and the cost has been reduced. The most expensive item is the lost light that results from an unclean fixture and the use of depreciated lamps, for the capital investment and the power cost remain the same even though the owner may be realizing only half the potential light output of his system.

Labor charges being as high as they are as compared to the cost of lamps makes the logical solution the planned maintenance schedule, for it is much cheaper to service all the units at one time than it is to take them one by one as the lamps burn out. Time intervals must be worked out on the basis of the type of work, the location of the area, and with due regard to the psychological aspects of the owner. Burning hours and other intangibles can only be determined as they become apparent for each specific problem.

The importance of designed maintenance cannot be stressed too forcibly in our comprehensive plan of a lighting system aimed to give the user a practical and economical solution to his lighting needs. Countless experiences throughout the years in the practical field of lighting application have given credence to the statement made by a leading lighting designer "that with all other factors being only relatively equal, the system planned with designed maintenance in mind can be justified, even at a much higher initial cost!"

Environment

(Continued from page 37)

daylight by about 50 degrees. Desk tops are light (natural birch is typical) with a brightness of about one-half of the usual visual task. Chalkboard is not black, but preferably a medium green. The walls are light—but not too light—having a reflectance of 60 to 65%. Floors are light in tone. The ceiling is white to give maximum distribution to daylight or to the artificial illumination. The whole pattern is one of pleasing deviation from uniformity, yet within the I.E.S. suggested limits of 3-to-1 for brightness ratios.

The co-ordinated classroom provides a most favorable surround (in the light of today's knowledge) for the healthy development of school children.

Offices

The principles of the "co-ordinated classroom" apply in general to the "co-ordinated office." Adults are less subject to permanent body changes resulting from the forces exerted by their surroundings, but, nevertheless, problems of bodily and visual comfort, are involved. The environment in an office should contribute to maximum visual accomplishment.

Current practice calls for a minimum of daylight glare; for desk tops in low contrast to the task to be performed, a mottled mist green linoleum is ideal; walls, dark enough to be less pro-

amplex

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the NEW idea in accent lighting

Only Swivelites give you these four exclusive features:

Superior Double-Ball Swivel Enduring Finish.

Improved Airflow Ventilation Unique "Adapt-a-Unit" Principle.

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minent than the visual task, yet light enough to give maximum diffusion of light. A reflectance of 55 to 65% is desirable. Extreme contrasts, such as daylight reflections in glass partitions, or brightness anywhere in the visual background should be avoided.

It has been noted that activities of a physical nature have been stimulated by bright surroundings. For exacting mental and visual tasks, as in executive or technical offices, ample light on the task with a somewhat subdued surround is desirable.

Stores

A store presents a different problem. Here merchandise is to be sold. Light and color can be co-ordinated into an atmosphere for sales. First, the customer must be made to feel welcome and put in a receptive or "buying mood." Color harmonies are an important part of the environment. Adjacent areas may be in decorated different colors but should be in an harmonious relationship. Transition from one department to another should be pleasing.

More important, each item of merchandise is seen against a background, and each background should be created in light and color to compliment each object or group of objects. Moreover, each purse or shoe or scarf may be enriched by its contrast to its background. It can be made to appear in its best "light." "Impulse" items, especially, may be accented by light and color.

Homes

In a home the decorations and atmosphere are personal. While the decorator has a wide latitude in the creation of unusual and charming effects, colors should be keyed to the psychological need of the occupants. Diluted or mixed colors are generally more satisfactory than rich, pure colors. Walls should not be predominant over high fashion gowns or fine furniture.

In certain areas of the home, as in a child's study, personal preference should be tempered by a realization of the function of the room.

There are many other interiors which require special color care. The proper use of light and color in a restaurant contributes to the enjoyment of good food and can flatter the complexions of the lady patrons. A person in a hospital can be helped to feel better surrounded by warm, cheerful, but subdued, coloring. Banks and public buildings of all kinds deserve the best in co-ordinated color planning.

Quality

(Continued from page 36)

conditions peculiar to the particular occupancy. The night club in which atmosphere or appearance is the principal objective of lighting; the industrial plant where production dictates the quality of lighting; the bank in which lighting must be of such quality as to lend dignity and assurance, creating confidence in the institution.

We must know the important requirements in each case and how much weight to give each factor in determining whether the lighting is appropriate and comfortable and hence of good quality.

Quantity

(Continued from page 35)

at a tree with foot-candles in excess of five hundred. It is therefore very doubtful if we have as yet even approached the ultimate in the quantity of interior illumination. Quantity recommendations of lighting will certainly increase in the future as in the past as methods of producing glare-free illumination become possible and the cost of electrical energy becomes lower, since the eco-

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No. 204. In brown Bakelite and ivory Urea. Efficient and lasting. Has shadeholder ledge. 660W 250V.

MOLDED TWIN LITE SOCKET
No. 205. Attractively designed in heavy, brown Bakelite and ivory Urea. Practical unit. 660W 250 V.

WEATHER PROOF SOCKETS
No. 202A (left) Heavy Bakelite shell, with molded Bakelite insert. Bronze contact. No. 203—same style with rubber shell and Bakelite insert. No. 206 (right) Pin type—has suspension hook. No soldering. 660W 500V.

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STA-BRITE SETS THE PACE
★ IN THE SOUTH ★
If it's fluorescent
MAKE IT SLIMLINE
STA-BRITE FLUORESCENT MFG. CO.
125 NW 22nd Lane, Miami, Fla.

nomics of lighting and does enter into the problem.

If our eyes were as critical under low levels of illumination as our other senses are of being too hot or too cold, the selling of the proper quantity of lighting would be as easy as selling a heating system which will provide a temperature of seventy degrees.

It is most encouraging to note that the general public has become more and more light conscious during the past decade. This has been brought about by such things as the national Better Light—Better Sight movement, the development and sale of the I.E.S. and "certified" lamps, the production of the fluorescent lamp bulb, the publication of home lighting articles in national magazines, and the use of the photoelectric cell for the measurement of lighting intensities in foot-candles.

The term foot-candle now seems to be well established in "everyday" vocabulary, understandable by the average layman. It is quite common today for a customer to ask, "What intensity in foot-candles do you think I should have?" Such facts as these certainly makes the sale of the proper quantity of illumination much easier. Perhaps the time will soon come when other terms such as brightness ratio and foot-lambert will also be familiar to the prospective purchaser of new lighting systems.

With the general public's becoming light-conscious and requesting better lighting, we in the lighting industry should certainly see that all planned lighting installations measure up to check point number four — "Quantity of Illumination in Foot-candles."

A planned lighting system in addition to providing adequate foot-candle levels should also be flexible and provide some margin for future changes. The margin for future changes or expansion can be made at the branch circuit column by the addition of spare circuits or by not loading the branch circuits to their allowable capacity. The use of branch circuit wiring of less than number twelve wire should be avoided.

Numerous well planned incandescent installations of former years have recently been converted to high level fluorescent systems without additional wiring being required.

To make a lighting installation flexible, consider such points as multiple switch control, to provide greater or lesser amounts of illumination as the amount of the daylight support of the system varies. The additional use of the germicidal lamp and the fluorescent sun lamp should also be considered.

In auditoriums, gymnasiums, and churches where the various functions and activities call for different foot-candle levels, dual systems should be employed. Dimmers can also be applied to the system to assist in varying the intensity.

With proper planning prior to the installation, any lighting system can be made flexible and allowances made for future expansion.

Luminaire

(Continued from page 34)

fluorescent lighting systems, in comparison with incandescent, emphasizes the need for selecting fixtures having high efficiency and reasonable initial cost, to permit required intensities to be obtained with minimum maintenance and over-all operating costs.

Where unusually dirty conditions are encountered, a fixture which collects a minimum amount of dirt and which is easy to clean, should be selected. In locations which are difficult to reach, special devices such as lowering hangers or pole lamp changers may be economically justifiable, and lamps having long life would be preferable. Selection of fixtures should definitely take into consideration the cleanliness of the atmosphere in which they will operate, their accessibility and ease of maintenance.

Before fluorescent equipment was available, the question of economic design usually centered around the selection of a particular size (wattage) of incandescent unit. Today this matter is considerably complicated by the

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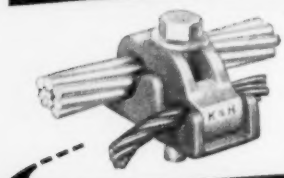

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wide variety of sizes and types of luminaires available. Cost factors including initial installation, electrical consumption, and maintenance must be considered.

The public, and many architects and engineers, have "gone overboard" on fluorescent equipment. There are many locations where electric rates are very low, or where usage of lighting is small, where the higher cost of fluorescent units is not justified. Evaluation of the cost factors mentioned will indicate the light source providing the lowest, over-all cost for a specific installation.

However, it is recognized that in some instances, economics is not the primary consideration. Special applications such as the "punch lighting" for jewelry stores, spotlighting of displays, and similar local lighting installations can be obtained only by the use of concentrated sources, so the question of economics here is not one of choice of luminaires, but rather evaluation of results compared to investment and operating cost.

The type of interior and the functions to be carried on affect the choice of source and luminaire. In commercial interiors (merchandising) attractive appearance and high efficiency are prime requisites. In interiors where eye tasks are severe (offices, schools, drafting rooms), the quality of light is of first importance; consequently, luminaires producing a minimum of direct or reflected glare should be selected. In industrial applications, direct lighting units are usually selected because of the reduced maintenance and high efficiency provided — however, the problems of both direct and reflected glare should also be carefully considered in the selection of proper units.

In some special cases, extremes of temperature may point to the selection of incandescent equipment because of the adverse effect of excessively high or low temperature on the operation of fluorescent lamps.

The design of the luminaire and its conformity to the architectural treatment of the interior are important points in the aesthetic acceptability of the over-all installation. The co-operative efforts and talents of the architect and engineer will insure harmony of appearance and lighting effectiveness through the choice of luminaires of architectural integrity, yet of correct design to accomplish the desired lighting results.

In passing, it should be pointed out that frequent starting reduces the life of "F" lamps. Therefore, in applications requiring very frequent switching of lamps on and off, luminaires using incandescent lamps may prove more economical.

The foregoing brief discussion has attempted merely to point out some of the factors to consider in the selection of luminaires for general lighting applications. A considerable amount of time and effort can be saved by capitalizing on the experience of others. Therefore, full use should be made of IES Data Sheets and other reputable sources of accurate information on various types of applications. This information, evaluated in the light of the specific problem at hand, will often simplify the task of selecting the type of luminaire which offers the best all around solution.

Sources

(Continued from page 33)

brightness lamps will obviously, however, increase the initial cost of the lighting system, as well as the cost of lamp renewals due to the fact that approximately twice

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as many fixtures and lamps would be necessary to provide a quantity of light equal to that obtained by conventional "F" lamps operating at higher, normal current values. The cost of wiring would also be augmented slightly.

If cost is of prime consideration, the best choice of lamp should be the one which combines both high efficiency with maximum light output per foot of tube length. Up until the present time, the conventional preheat, 40-watt, T-12, bi-pin base lamp has been generally considered as the standard, all-purpose lamp to meet these requirements for general illumination. However, it now appears that the new 96-inch, T-12, 430 m.a. Slimline lamp is fast becoming one of its strongest competitors, and, eventually, may far surpass it in public acceptance.

The chief reasons for this condition are attributable to the fact that on the basis of economics alone, one 96-inch T-12 Slimline lamp is approximately equal to that of two 40-watt, T-12, preheat lamps. In addition, the Slimline lamps have many plus advantages such as high efficiency, no starters, instant start, single pins of rugged construction, easy to install, and only half as many lamps to replace and maintain.

Effect of High Ceilings

If the ceiling of the school classroom or office is exceptionally high, say 14 feet or more, and the inconvenience and cost of labor of maintaining the system is considered a major problem, it would then be advisable to consider using the 5-foot, 85-watt, T-17 lamp. Only half as many lamps would be required which, in terms of a complete lighting installation might mean 2 rows of fixtures instead of 4, or two-lamp fixtures instead of four-lamp.

As a further comparison, it would be entirely possible that the amount of square feet of luminaire reflecting surface to be cleaned would be 50% less with the 85-watt lamp selection.

It is not our purpose to argue the relative merits and demerits of one color fluorescent lamp as compared to another. The essential objective is to provide the customer with that Kelvin color temperature lamp which seems to please him most. In fact, it makes practically no difference, whatsoever, in visual acuity whether the lamp be 4500 K cool white or 3000 K warm white. The only exception to the rule would be in art classes and similar areas where for the sake of proper color renditioning the DeLuxe Cool White lamp would be the proper choice.

To serve as a guide, however, in making a color temperature selection which would have nearly universal acceptance, it would be well to point out that statistical records appear to bear out the conclusion that cool white lamps are preferred by the majority in school and office work areas, which is undoubtedly due to their better compromise of color temperature between natural daylight and artificial, incandescent lighting.

The warm white lamps are more to be preferred in social areas such as clubs, lounges, hotels, homes, etc.

Stores

The requirements of good lighting in this classification vary considerably from the few simple essential needs of the small store merchant to a vast number of special lighting requirements involved in the layout of the department store type of retail store establishment. In the latter case, practically every light source listed in the standard price schedules would find some sort of application. For the purpose of this article, however, it is essential that we confine ourselves to the major, essential needs and wants of the customer which is more aptly described as "Lighting for Attraction, Appraisal and Atmosphere."

General lighting is often referred to as the "Foundation Lighting," upon and around which supplementary light sources of various descriptions are used.

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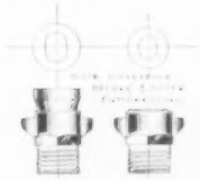

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The prime objective of general lighting, supplied either from recessed troffer units, ceiling, or suspended fixtures, is to create a bright, spacious and attractive atmosphere within the store; but more important it should satisfy the function of good foundation lighting for quick, easy and comfortable appraisal of the merchandise at any point in the store. As such, the rules determining the proper selection of the light source would very much fall into the same category as outlined under schools and offices.

The only real exception to the general rule would be in those cases where fixtures of unusual design or treatment are specified for complete integration within the architectural elements of the store. The purpose of this Planned Lighting is to establish such desirable qualities and objectives as store distinctiveness, beauty, atmosphere and attractiveness.

In any case the nucleus of any such lighting system should be essentially composed of standard incandescent or fluorescent lamps to provide the maximum amount of light at lowest cost—as discussed under Schools and Offices.

Two to four times as many foot-candles are required for show and wall cases, counters and feature displays in order to increase their brightness and attraction power over other areas in the store. In addition, colored lighting, used artistically and judically, will further enhance the appearance of the display which comes within its range. For such purposes there is a wide range of both incandescent and fluorescent lamps from which to make our selection.

For show and wall cases there is a marked tendency towards the use of the small diameter T-6 Slimline lamps, permitting the use of smaller reflectors, thereby affording maximum visibility. The over-all length of the case will, of course, largely decide the length of Slimline lamp to use. Wherever possible, the longer length lamps are more preferable due to their higher efficiency. The lamps should be operated at either 120, 200 or 300 m.a., whichever current rating will provide approximately twice as much light in the cases, as compared to the level of illumination in general sales areas.

Another important advantage in favor of the fluorescent lamp selection is that less wattage and heat is generated within the case, and the glass tops directly above the lamp is not uncomfortably warm to the touch.

Of course for those who insist upon it, and desire the warmer tones of the light from a tungsten filament, there is still available the conventional, incandescent, T type show case lamps furnished in the 25 and 40 watt sizes, clear and inside frost, or half silvered, to meet the demands and character of any show case problem.

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The execution of the proper selection of light sources in an industrial plant introduces a few more perplexities because here we have the mercury lamp to consider, in addition to the incandescent and fluorescent lamps.

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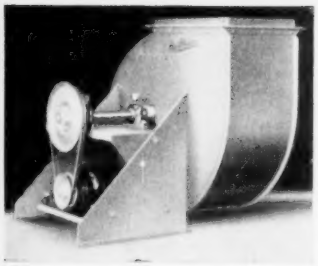

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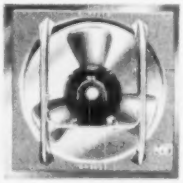

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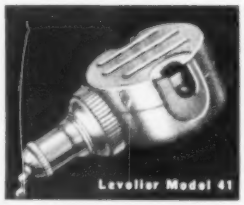

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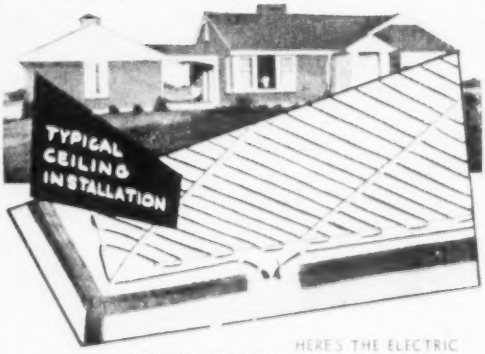

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IN THIS ISSUE

Television (Selling) Theater 98
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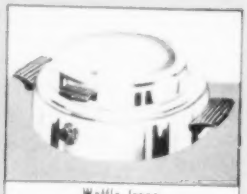
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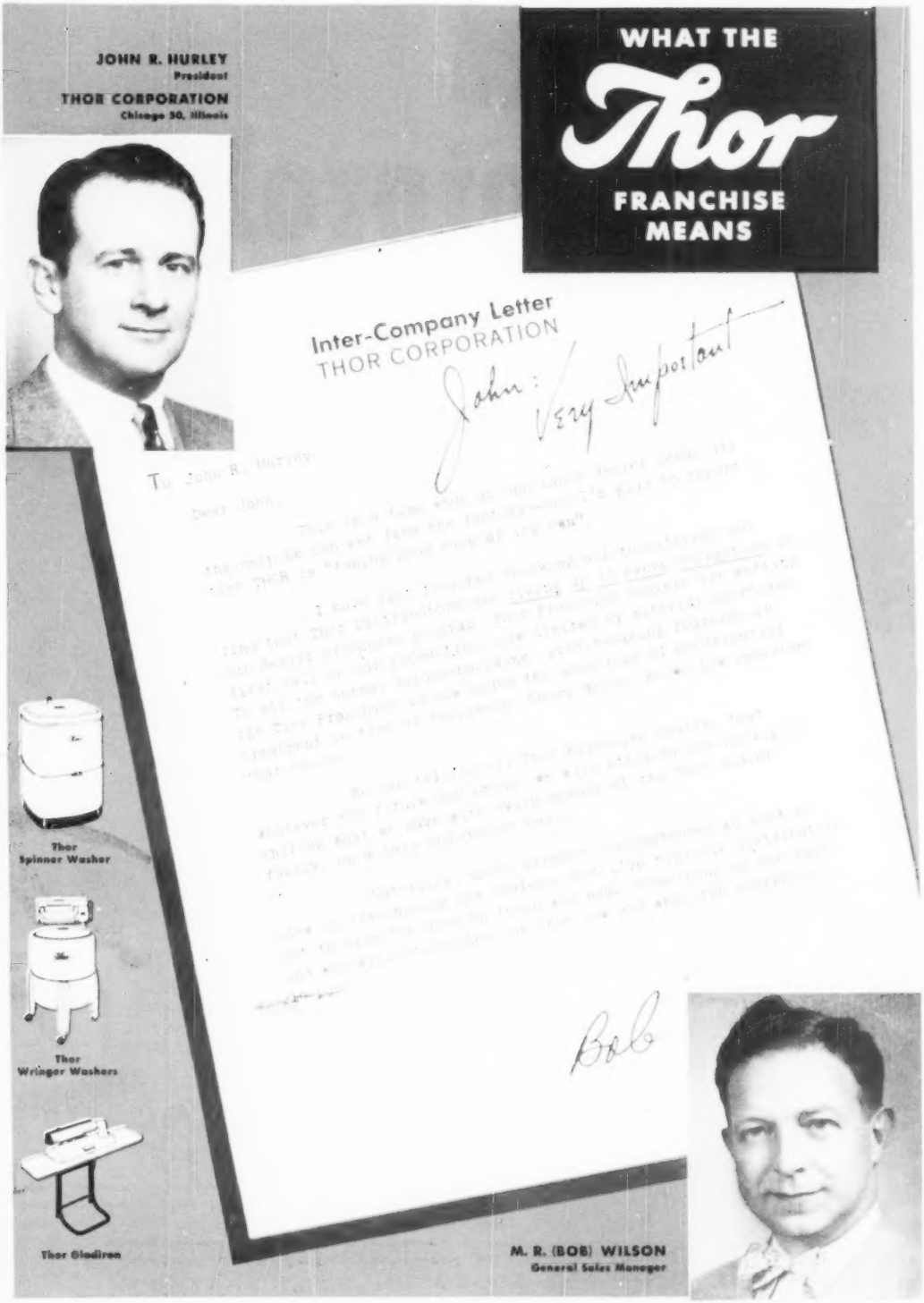
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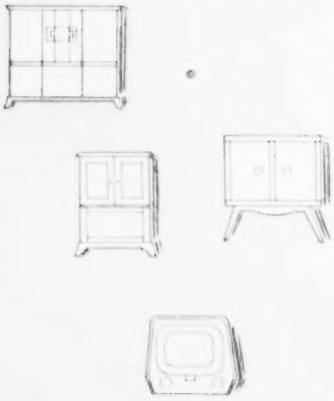

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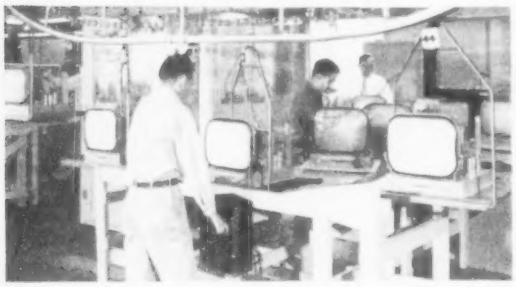

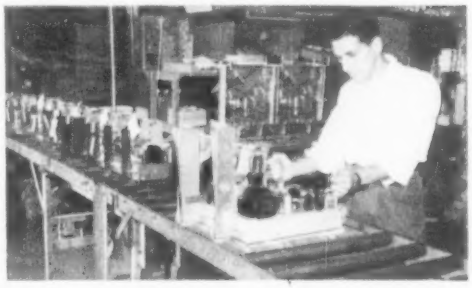

Motorola engineers have kept pace with Motorola designers in presenting you with a line that is the "leader" in TV Luxury. For dependable performance a line as equal. Each set must pass a battery of rigid tests such as the "Live Power" and "Shake Table" tests pictured above. The result is maximum consumer satisfaction . . . minimum dealer service . . . and record-breaking sales.

. . . and promoted by one of the BIGGEST ad campaigns in the industry

Motorola's smashing multi-million dollar ad campaign is geared to bring you 100 qualified TV sales leads per week every week. Everywhere, every page, every time . . . TV prospects will see and hear the Motorola story in newspapers, magazines, outdoor, store display, and other dynamic, leads-bringing media. Use and reap more sales for you.

NEW 1951

Motorola TV

MOTOROLA INC. • 4545 Augusta Blvd. • Chicago 51, Illinois

CONTACT YOUR MOTOROLA DISTRIBUTOR TODAY!

NEVER a dull month

Hotpoint Automatic Electric Dishwasher and Sink Combination.

As a sales leader for September, Hotpoint, the world's largest exclusive electric appliance manufacturer, brings you its greatest engineering triumph. Here's the famous Hotpoint Automatic Dishwasher and Sink Combination with Disposall® garbage disposer.

The Hotpoint Automatic Dishwasher *offers your customers the advantages of both front opening and electric-heat drying.* **Front opening** *to give greater ease in loading—to provide a whole sink-top of extra work surface—to allow for convenient installation under counter-top surfaces—to permit the use of an overhead down-rinsing spray, Calrod®.* **Electric-Heat drying,** *with its forced hot air circulation, to assure faster drying with clean, hot air. Available as a separate unit or in combination with Hotpoint Sink. Sink has built-in soap dishes and the amazing new WONDERFLO faucet.*

Disposall garbage disposer *(which can also be installed separately in any standard sink) banishes garbage and garbage cans forever. Does not overload or clog sewer systems.*

Switch to

for YEAR 'ROUND Profits!

'ANGES • REFRIGERATORS • DISHWASHERS • DISPOSALLS® • WATER HEATERS • FOOD FREEZERS • AUTOMATIC WASHERS

with Hotpoint

Hotpoint's Year 'Round Sales Program Builds Steady Turnover 12 Months a Year

The amazing success story of Hotpoint's dynamic *year 'round* sales program is being demonstrated . . . every month of the year . . . in thousands of better electric appliance stores across the nation.

Profit-wise merchandisers who demand steady, profitable turnover . . . *twelve months a year* . . . are switching to Hotpoint because Hotpoint's Full-Line Franchise provides all these important sales-making advantages—

- A top name in home appliances—a name commensurate with the dealer's own in prestige and public preference.
- A complete line of electric kitchen and home laundry appliances under one banner—a line out front in product styling, designing and performance.
- A fully developed *year 'round* retail merchandising program, assuring a well balanced flow of profitable sales . . . every month of the year.

Study these advantages . . . available in Hotpoint's Full-Line Franchise. If you're missing sales that should be yours, talk to your Hotpoint distributor and let him show you what the Hotpoint Full-Line Franchise can do for you.

No more "letdowns" following hot selling seasons

No more "doldrums" that eat away profits

No more "valleys" that reduce profit peaks

...but a full line of products that insures a full year of profits

Hotpoint!

Hotpoint Inc.

(A General Electric Affilia

5600 West Taylor St., Chicago 44, Illin

• CLOTHES DRYERS • ROTARY IRONERS • CABINETS

So simple
So safe
So easy to clean

(AND SELL)

TK Monotube's "See-for-yourself" Advantages Cinch Sales

Show a "shopper" how Monotube's exclusive Swivel-Action makes it the most easily cleaned unit ever made, and she becomes a buyer—pronto! Cleaning is as simple as 1-2-3, *and as fast!* Flick up coil. Remove triangular support. Wipe drip pan. That's all! No hard-to-get-at supports or braces to scrub—thanks to Monotube's simple, anchorless, one-piece coil. Prospects are quick to appreciate this easy-to-demonstrate feature.

"Hidden" Wiring and Terminal Blocks Another Sales "Plus"

Monotube's special, sealed-sleeve construction conceals and protects all lead wires. No exposed wiring to accumulate dirt and grease. Homemakers unfamiliar with terminals and lead wires, appreciate this added protection. Even when the pan is removed, wiring is not exposed. Women like this, feel safer . . . you sell more ranges.

Monotubes Give Fast, Uniform Cooking Heat

Fast because the rugged, *flat* coil provides up to 42.8% more contact with cooking utensils. Uniform because the entire coil is hot at any speed. No "hot-spots" or "cold-spots". No cold coils to heat and no hot coils to cool when turning from one heat to another. No special positions to remember. The "family chef" has as much or as little heat—uniform heat—as she wants simply by turning the switch.

And—that's not all! Homemakers get other wanted features: you get more sales "closers" with Monotubes. Simplest construction! Long, trouble-free service! Lower cost cooking! That's why most manufacturers now equip their ranges with Monotubes—the units that help sell ranges.

Monotubes "Up" Service Department Profits—Eliminate Service "Headaches"

Monotubes give "new range" performance to old ranges, are quickly and easily installed. No complicated installation, no call-backs, no special, apt-to-be-misunderstood instructions to give the housewife. Monotube replacement units come in the TK Monopack, a complete merchandising package that will bring you new profits. Ask your distributor—or write us direct.

GOT YOUR COPY? New catalog gives complete information on TK Monotubes, explains how to install on all ranges. Write now for this free, helpful data.

TK Monotubes Boost Sales

TK ELECTRIC HEATING PRODUCTS STAND ALONE IN ALL WAYS!

OVEN UNITS | TK INFINITE CONTROL | SWITCHES AND SELECTORS | WATER HEATER UNITS | FLATIRON UNITS | INDUSTRIAL UNITS

TUTTLE & KIFT, INC.

1823 N. MONITOR AVE., CHICAGO 39, ILLINOIS • A SUBSIDIARY OF FERRO ENAMEL CORPORATION

This Fall
more than 28,000,000
advertisements on the
REGINA TWIN-BRUSH
POLISHER AND SCRUBBER
8 Leading National Magazines
LIFE
POST
JOURNAL
House Beautiful
AMERICAN HOME
America's No. 1
POLISHER AND SCRUBBER
Greatest Value
Retailing at Lowest Price
DISTRIBUTORS
IN ALL TERRITORIES
REGINA
POLISHER TWIN BRUSH SCRUBBER
GOOD HOUSEKEEPING
Better Homes
Sunset
DISPLAY • PROMOTE • ADVERTISE
REGINA
Write for free dealer helps now!
MAIL TODAY!
THE REGINA CORPORATION, RAHWAY, NEW JERSEY
Also producers of Twin-Brush Industrial Floor Machines
The REGINA Corporation, Rahway, New Jersey
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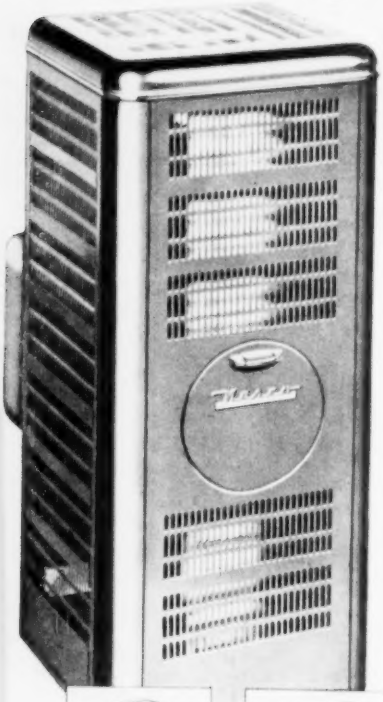
Name and address of distributor for my territory
Regina Polisher dealer helps
STORE NAME
ADDRESS
CITY AND ZONE
STATE
SIGNED

There's a quality-built oil heater by

NESCO

for every customer!



THE COMPLETE LINE INCLUDES THESE TWO POPULAR MODELS:

RADIANT CIRCULATOR NO. 750

Produces 10% more heat—heats 10% more room space—than most 8" models. Outstanding features include 8" Breese Pot Type Burner, attractive Ho-Coat high-lustre mahogany finish, A. P. Constant Level Valve, Automatic Draft Control, Convenient Lighter Door, 3-Gallon Fuel Tank, Adjustable Leveling Screws.

Certified Rating 15,750 B.T.U. per hour

RADIANT HEATER NO. 700

Nesco's super-efficient successor to the old-fashioned "pot bellied" stove. Welded steel construction. 8" Breese Pot Type Burner, Accurate Brass Metering Valve, Convenient Lighter Door, 3-Gallon Fuel Tank, Leveling Screws. Sub can has built-in Screen.

Certified Rating 12,000 B.T.U. per hour

CONVENIENT LIGHTER DOOR
Handily located at front of heater. Large opening permits easy access to interior for lighting and cleaning.

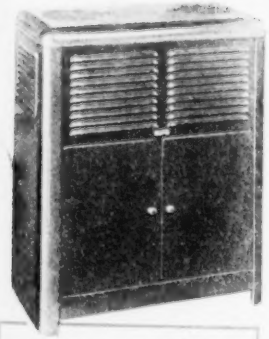
3 GALLON FUEL TANK
Attached to back of heater. Equipped with shut off valve. Can be removed if outside storage tank is used.

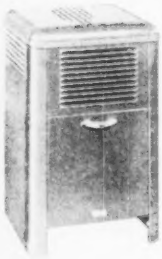
A.P. CONSTANT LEVEL VALVE
Maintains safe, exact oil level to provide degree of heat called for by control. Has built-in fuel compensator.

AUTOMATIC DRAFT CONTROL
Automatically adjusts for variations in draft and holds the draft to the right amount for efficient burning.

BREESE POT TYPE BURNER
Has low and high fire rings and scientifically machined air holes that insure most efficient economical combustion.

NESCO Cabinet Type Kerosene Heaters





These efficient Nesco Kerosene Heaters deliver quick, clean, healthful heat in any location. Both have Humidifying Pans, Adjustable Leveling Screws, convenient tray beneath burners, non-tip support and a rich brown finish. Model 150 has two Nesco DUBL-HOT burners and Model 140 has one.

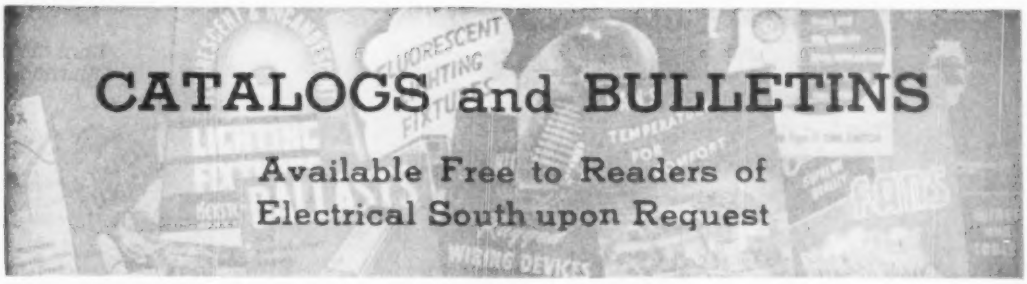
- **LOW OPERATING COST**
  Burns all day at a fuel cost of a few pennies.
- **QUICK, INSTANT HEAT**
  Cheerful warmth comes as quickly as you can strike a match and light burner.
- **NO FUEL CONNECTIONS**
  100% efficient because no heat escapes outside.
- **MOVE ANYWHERE**
  Take it with you! Very light in weight . . . portable to wherever you want heat.

FULL LINE OF ACCESSORIES TO MEET EVERY HEATING NEED!

Contact your NESCO Distributor Today!

NESCO, Inc. EXECUTIVE OFFICES: 270 N. 12TH ST., MILWAUKEE 1, WIS.

Sales Offices: Merchandise Mart, Chicago • Candler Building, Atlanta • 200 Fifth Avenue, New York
Ambassador Building, St. Louis • Western Merchandise Mart, San Francisco



CATALOGS and BULLETINS

Available Free to Readers of Electrical South upon Request

(Additional items will be found on pages 7, 9, and 97)

2004—Air Conditioning Equipment. New Bulletin No. 1158 B, "Central Air Conditioning Equipment," contains complete performance information on this type of equipment along with charts, specifications and maintenance instructions. The bulletin has been released by Buffalo Forge Co., P. O. Box 985, Buffalo 5, N. Y.

2010—Water Heaters. An illustrated folder describing Bell Water Heaters and the ten-year guarantee and warranty is available from Adam Mfg. Co., Napier Field, Dothan, Ala.

2012—Room and Unit Heaters. Electromode Corp., 47 Crouch St., Rochester 8, N. Y., has announced two new catalogs, each of which contains descriptions, complete specifications, illustrations of the units, and shows typical installations as well as other helpful information concerning heating by electricity. Catalog EC 62 is the industrial catalog and No. EC 63 is the domestic catalog.

2014—Hot Water Heaters. Information and maintenance data are available from M. M. Hedges Manufacturing Co., Inc., Chattanooga, Tenn., on their line of "Morland" Automatic water heaters.

2018—Electric Fans. A 72-page, pictorial-constructed booklet describes in complete detail, the company's line of fans. Booklet available from Emerson Electric Manufacturing Co., St. Louis 21, Mo.

2022—Window and Attic Fans. A four-page catalog piece completely illustrated and containing descriptive information on the new low cost "all in one package" window and attic fan line just been released by the Viking Air Conditioning Corp., 5607 Walworth Ave., Cleveland 2, Ohio. Illustrations of automatic ceiling shutter and automatic electric louvre are included.

2024—Electric Water Heaters. New specification sheets are now available for a full line of reliable and trim top models, featuring the Water Heater, from the White Products Corp., Middleville, Mich.

2028—Fans. Catalogs Nos. 303 and 304, just issued by Chicago Fan & Blower Co., Inc., 1206 Grove St., Irvington 11, N. J., include descriptive copy, specifications, dimensions, photographs, etc., of a full line of fans for residential, commercial and industrial uses. These catalogs include information on 17 types of ventilating and comfort cooling equipment covering sizes from 12 inches to 60 inches.

2030—Electric Fans & Dolls. Showing complete line of fans in a new catalog, not all the pages featuring a wide variety of desk, pedestal, exhaust, and wall fans. Information on dolls, toy-genic equipment, and motors is also available from the Signal Electric Mfg. Co., Menominee, Mich.

2032—Electric and Gas Water Heaters. Four-page illustrated folders explain outstanding features of Leaders' water heaters including porcelain finish, "black heat," chromatic and 5-way insulation. These folders list specifications, dimensions, and construction details and are available from Leaders Manufacturing Company, 2345 S. E. Gladstone St., Portland 2, Ore.

2034—Electric Flat Irons. Full information on American Beauty Electric Flat Irons in a straight, a shape, a size for home-holds as well as every industrial and manufacturing use, is available in literature from the American Electrical Heater Company, Detroit 2, Mich.

2038—Murray Ventilating Fans. A set of specification sheets is available describing the Murray line of fans, including 20 and 24 inch window fans and vertical and horizontal ventilating fans. H. C. Bagby Co., Inc., 177 Hunter St., NW, Atlanta 3, Ga., is exclusive sales agent for the line which is manufactured by Murray Co. of Texas, Inc.

2040—Electric Blowers and Exhausters. Bulletin B114D describes Types "A" and "BL" Buffalo Blowers and exhausters manufactured by Buffalo Forge Co., Buffalo 7, N. Y. Charts, showing at the glance graphic charts including capacities and static pressures, and every dimension are contained in the Types folder.

2042—Window Fans. Mills Electric & Machine Co., Inc., 2327 E. Washington St., Indianapolis 7, Ind., have issued the following catalog sheets: Form 2207 which describes and illustrates each of their five Nicon Washdown Fans; Form 2208, describing and illustrating three three-blade and one four-blade Nicon Quiet Propellers, and Form 2209 which illustrates the Nicon Washdown No. RW 240 or RW 360.

2046—Household Electrical Appliances. Thermador Electric Corp., Mansfield, Ohio, offers catalog information and detailed specifications on a complete line of Glass Appliances, called "Cando Utensils."

ELECTRICAL SOUTH
806 Peachtree St., NE
Atlanta 5, Ga.

September, 1950

Gentlemen:

Please send me the bulletins and catalogs indicated.

(Print Plainly)

Name Title

Company

Address

City & State

Circle numbers below. Bulletins and catalogs will be mailed promptly.

2004	2010	2012	1014	2018
2022	2024	2028	2030	2032
2034	2038	2040	2042	2046
2054	2056	2058	2064	2066
2070	2072	2074	2078	2080
2088	2090	2092	2094	2096
2098	2100	2102	2104	2106
2108	2110	2112	2114	2116
2118	2120	2122	2124	

Is your company ringing the bell

FOR EVERYONE'S FINANCIAL INDEPENDENCE?

We all can help keep our country economically strong by pulling strongly in the Treasury Department's Independence Drive, May 15-July 4. Obviously this is important to you, because what's good for the nation is good for you and your company.

The purpose of this drive is to increase everyone's financial independence through the regular purchase of United States Savings Bonds. Your "pull" is needed because the greatest share of Series E Bond sales are made through the Payroll Savings Plan — and the Plan most used by 21,000 companies thrives best in any company where it gets top management's personal sponsorship.

If your company doesn't have the Payroll Savings Plan, now is certainly the time to install it! It's good "employee relations" to provide this convenience.

If your company does have the Plan, now — the time to put extra push behind it! Employees who pile up money in Savings Bonds feel more secure . . . are actually better workers. Moreover, Bond sales build a backlog of future purchasing power—good "business insurance" for all of us in the years ahead.

The Independence Drive is being powerfully promoted throughout the nation by radio, television, publication advertising, posters, car cards, and special ceremonies. The public is *extra* Bond conscious at this time. Make sure your company adequately informs your employees that the convenience of "automatic" Bond buying is available through Your Payroll Savings Plan.

This is your country—so it's *your Drive*. Help to put it over. All the material and assistance you need are available from your State Director, Savings Bonds Division, U. S. Treasury Department. Go into action now!

The Treasury Department acknowledges with appreciation the publication of this message by

ELECTRICAL SOUTH

BOOST BONDS FOR INDEPENDENCE · PROMOTE PAYROLL SAVINGS

This is an official U. S. Treasury advertisement prepared under the auspices of the Treasury Department and The Advertising Council

2054—Fans. The C. & H. Air Conditioning Fan Co., Inc., 1591-1621 DeKalb Ave., N. E., Atlanta 6, Ga., have released an interesting 28-page booklet, "Cottongim's Supreme Quality Fans." Besides showing pictures of various models, views of operations inside the plant, and specifications, there is a section devoted to methods of installation of attic fans.

2056—Radiant Heaters. Edward C. Wagner Co., 7802 Thomas Blvd., Pittsburgh 8, Pa., has prepared a portfolio of Chromalox Radiant Heater Application Reports. In addition, the portfolio includes catalog sheets and technical data on the Chromalox "RAD" heaters.

2058—Exhaust Fans. A new Emerson Electric Exhaust Fan catalog, illustrating and describing in detail this line of fans for all types of buildings, is offered by the Emerson Electric Mfg. Co., St. Louis 21, Mo.

2064—Electric Fans. An attractive, 8-page, 62nd Season Catalog of Zephair fans has been made available by the Hunter Fan & Ventilating Co., P. O. Box 2858, Memphis 2, Tenn. A comprehensive description of this company's products is given, with complete specifications and dimensions.

2066—Shutters & Dampers. A 12-page catalog (No. 46) is available from the Elgin Shutter Mfg. Co., 2738 W. Warren Ave., Detroit 8, Mich., describing the 17 different types of shutter and dampers manufactured by them, and as used in connection with ventilating and air-conditioning installations.

2070—Zephair Fans. Hunter Fan and Ventilating Co., Inc., 400 So. Front St., Memphis, Tenn., offers a new 8-page catalog containing detailed information on the Hunter Zephair Fans, for home and industry.

2072—Reed Unit Fans. Two new 8-page booklets on unit fans have been published by Reed Unit Fans, Inc., 1010 St. Charles Ave., New Orleans 8, La. Material included in these booklets covers design, accessories and installation of the Reed window and attic fans respectively.

2074—Ventilating Fans. The complete line of C. & H. ventilating fans is pictured, with dimensions and details, in a new 24-page catalog. Described are exhaust fans, window fans, air circulators, portable and desk fans, and fan accessories such as grilles and shutters. C. & H. Air Conditioning Fan Co., Inc., 1603 DeKalb Ave., N.E., Atlanta, Ga.

2078—Sales Helps. A variety of sales helps, including Stained Slide Colored Training Films, How to Sell Booklets, Consumer Electric Specification Sheets, Demonstration Kits, Display Cards and Promotion Kits for selling and demonstrating Kenmore Mills Home Appliances, Presto Qui-E Saucepan, TriHeat Iron and Steam Ironing Attachments are available to dealers from General Mills, Inc., Home Appliance Dept., 1620 Central Ave., Minneapolis 13, Minn.

2080—Water Heaters. Information is available about the "SELECT" Electric Water Heater from the Automatic Electric Heater Co., Emmaus, Pa. Literature is available on request. Special emphasis is placed on the "SELECT" line of round automatic tank heaters.

2088—Air Circulators. Various examples from the Fan Line are featured in a new page. These "non-catalog sheet" items include a wide variety of desk, pedestal, ceiling, counterpoise, and turntable window fans. Also available is a descriptive folder on Vornado's new Sunshine Ventilator Fan. Vornado, Inc., The G. A. Sutton Corporation, Wichita, Kansas.

2090—Fan Blade & Battle Outfit. An illustrated catalog sheet describing three Knock Down Fan Blade & Battle Outfit has been announced as available from S. T. Stewart Electric Co., 1 St. Joseph St., New Orleans 12, La.

2092—Air Circulators and Window Fans. The Complete Line of Kool-Breze Models, Air Circulators and Portable Window Fans for 1950 is illustrated and described in a series of two color catalog sheets and envelope stuffers available to the trade. A Special Sales Manual containing product and sales information is available free on request to Dealers handling Kool-Breze Products.

2094—Marquette Refrigerators. Informative catalog pages and specifications are available from Marquette Appliances, Inc., 107 E. Hennepin, Minneapolis, Minnesota.

2096—Marquette Home Freezers. Vital information on Marquette's super 6 cu. ft. capacity, three position 110-lb. cu. ft. Marquette freezer and their "B-2" Valve, "super 8" cu. ft. is available from the Marquette Appliances, Inc., 107 E. Hennepin, Minneapolis, Minnesota.

2098—Marquette Electric and Gas Water Heaters. Twenty-three models assure a water heater for every need. A four-page booklet explains the features of the Marquette with harp fin and may be secured through Marquette Appliances, Inc., 107 E. Hennepin, Minneapolis, Minnesota.

2100—Marquette Electric Ranges. An individual catalog and specification sheet is available on each of the four popular Marquette range models from Marquette Appliances, Inc., 107 E. Hennepin, Minneapolis, Minnesota.

2102—Marquette Gas Ranges. Five beautiful models covering the entire decorator or any housewife demand in color and with individual specifications and catalog pages may be secured from Marquette Appliances, Inc., 107 East Hennepin, Minneapolis, Minnesota.

2104—Marquette Home Laundry Equipment, Includes Washers, Dryers, and Ironers. For well-illustrated catalog pages that bring out the features and selling points of this popular priced laundry equipment, write to Marquette Appliances, Inc., 107 E. Hennepin, Minneapolis, Minnesota.

2106—Fan and Centrifugal Blowers. Catalog No. 513-B. Vital specifications, 1950 Fresh Air Maker Gas Hy Duty, Centrifugal Blowers. Attic, Portable, Window, Exhaust Fans, Single and double inlet blowers. Ventilating Division Schwitzer Cummins Co., 1125 Mass. Ave., Indianapolis, Indiana.

2108—Household Refrigerators. Farm and Home Freezers, Electric Ranges. Complete information regarding Coldwater spacesaver "under on the back" refrigerators, a revolutionary new combination Gas-Electric refrigerator and automatic-reset heat cycle Allstate electric ranges. Water Conditioner, Duluth 1, Minnesota.

2110—Select A Range. Landers, Frary & Clark, New Britain, Conn. Eight page folder giving full information on Universal's specifications for Select A Range, with the Continuous Level Cooking. Illustrates various parts of range. "as Royal Rare Wild Strawberry and Gift Iron to accessories."

2112—Oil Heaters. An attractive colorful 16 page catalog entitled "New Comfort Heating" describes and illustrates the complete New Line of Coal Oil Heaters and Kerosene Heaters is available from the Sellwood Manufacturing and Stamping Company, 2-6 N. 17th St., Milwaukee 1, Wis.

2114—Electric Heaters. A new catalog page showing Electric Heater Models from Minneapolis Electric Products, Inc., Buffalo 26, N. Y., is available. A line of unit heaters and recessed and surface mounted models, Electric Space Heaters for room to the home and office are described.

2116—Replacement Heating Units. [illegible] Replacement Heating Units for the complete line of Crane Radiators, [illegible] Crane's Line of Pipe Insulation. Free copy of [illegible] is available on request to Lawson & Kett, Inc., Chicago 30, Illinois.

2118—Electric Fans. Robbins & Myers, Inc., Springfield, Ohio, offers an attractive 8-page illustrated catalog covering complete [illegible] and performance [illegible] of Robbins & Myers domestic, commercial and industrial fans. For Table & Wall domestic, commercial and industrial fans, for Table Size of [illegible] and 12" desk fans.

2120—Everhot Electric Homeware. Electric Utensils and Gift information is available showing the complete line of Everhot Electric Homeware including Roasters and their accessories, Toasters and Heater Fans, Rotisserie and Electric Blankets. The Everhot Co., [illegible] and is available from Sales Division Mfg. Co., 5116 W. Roosevelt St., Chicago 50.

2122—Surface Heating Units. For electric ranges. Complete information for fitting the Bunger TK Monolithic Electric Range surface heating units and all types of electric ranges. Range surface heating units and all types of electric ranges are in advance to be supplying the replacement market from Lytle & Kohl Inc., Chicago 30, Illinois.

2124—Evaporative Air Coolers. Home and commercial. Lynch Manufacturing Company, 1970 Santa Fe Avenue, Los Angeles 21, California, offers a complete line of eighteen models ranging from 1,000 CFM and mount-on-top coolers to 42,000 CFM, industrial building coolers. Featured also are the Rosson Jumbo Plant-In units, completely self contained washed air room coolers. Write for further information.

Opening night at the Television Theater in Dallas shows a portion of the 12,000 people who attended. A minimum of formality characterizes the outside appearance of the dealership. There are no walls nor partitions — people feel free to enter.

TELEVISION THEATER

by Baron Creager

Merchandising policy features large stocks, excellent service, minimum of formality

◆ IN THE BLACK at this writing after two months of operation, the Television Theater of Dallas, Texas, (a retail merchandising organization) has already proved a success.

Hal D. Applegate, partner and manager, declines to release figures on volume, but says that remarkable progress beyond expectations has been made. Therefore the factors in this venture justifiably assume they correctly diagnosed the public and found demand for an exclusive television show room such as this Television Theater.

"What we had in mind as our ultimate objective," explains Applegate, "was an exclusive television dealership with sufficient stocks of what we consider the outstanding brand names, where people can discover just exactly what they will get for their money in a television set."

•

Service volume is growing so rapidly that the firm plans to add another crew — two men and a truck — within a short time. This truck is the one currently in use by the Television Theater. Easy-to-read, poster-type lettering advertises the dealership and its services.

Service is considered one of the most important factors in this television dealership. Top bracket personnel in this department, such as W. M. Holder, left, W. L. Conner, center, service manager, and W. G. Hamilton, right, has enabled the firm to build up a substantial service volume resulting from the sale of sets by competitors. One of the duties of the service department is to test every set on the floor each morning before opening time.

With that objective, the new Dallas Television Theater opened on April 10. As a result of guest registration, the Television Theater suddenly found itself in possession of a prospect list of 12,000 names.

Opening of such an institution, however, was not merely a matter of finding a location, installing a stock, and opening the doors. Behind it all was months of careful consideration of prime factors—type of physical equipment of such a dealership, service policy, and promotion program—and the study involved a trip to California to inspect similar enterprises there.

One decision resulting from the California trip was that there would be a minimum of formality about the outside appearance of the dealership. Applegate says:

"We found that the most successful dealer in California had no highly formal front and that his establishment was most easily accessible.

"His building sits back from the street about 30 feet and his front consists of a permanent canopy, with no walls nor partitions.

"So we decided to make our institution easy to get into. This we have done, for in fair weather we can open a number of doors. Our front is almost a cross between a fruit stand and a used car lot. There is nothing about the outside to overawe people. They feel free to enter, all classes, and that's what we want."

Inside the Television Theater, however, there is nothing to suggest a fruit stand or used car lot. There is air conditioning for all four individual vision rooms, one for each make handled, each tastefully and comfortably furnished. In these the prospects can, without any distractions, make their appraisals of sets and tube sizes.

Applegate admits that accessibility of the place, with TV sets almost within arm reach of passersby, brings in many who are not qualified to be in the TV market.

"But it only takes about 15 or 20 minutes to determine if an individual is here to buy a set or merely from curiosity," he says. "And we want all classes of peo-

(Continued on page 128)

The attractive main display room contains corrugated steel disappearing doors that carry fluorescent lamps. These lamps are attached to the inside of the doors, and when the doors are raised to the inside ceiling, the lights illuminate the display of television sets below.

Results of survey reveal that owners would not do without this appliance . . .

WHY WOMEN BUY FREEZERS

◆ LAST YEAR Kelvinator decided that since the freezer had been in wide use in homes for several years, the time had come to go to the homemakers and ask them frankly what they thought of this appliance. The result was a nationwide survey among home freezer owners — rural, small-town, and urban.

While the survey was designed to find out the kitchen-proved advantages—or disadvantages, if any—of the freezer, nevertheless, these advantages can be interpreted as reasons why women buy home freezers.

The first question asked Kelvinator users was, *"Since you started using your home freezer, do you make more or fewer trips to the store or market?"*

A total of 91.9 per cent said that they made fewer trips to the store. Only 8.1 per cent reported no difference in the number of trips or made no estimate.

The next question asked these homemakers was, *"If you make fewer trips, how many trips do you save each week?"*

An average of three trips saved per family was reported. This means that there was an average saving of more than 150 trips per family during the course of a year.

A very significant question which drew very significant answers was, *"Have you been able to save money with your home freezer?"*

Of those replying, 89.8 per cent reported definite savings from use of their freezers; 6.1 per cent made no answer to this question, and 4.1 per cent reported no savings.

For a breakdown of the saving question, *"What principal foods are you saving money on?"* The percentage of user mentions are shown here on each item:

Meat, 88.5 per cent; fruit, 66.1 per cent; vegetables, 65.8 per cent; ice cream, 62.4 per cent; seafood, 54.2 per cent; dairy products, 27.8 per cent; and baked goods, 19.0 per cent. Many other specific food savings were also reported.

Having determined that there is an actual savings and on what foods savings are made, the next question asked, *"How are you saving money?"* The percentage of mentions are indicated here:

Buying foods in season, 59.0 per cent; buying foods in large quantities, 53.2 per cent; buying foods at bargain prices, 47.1 per cent; raising some of own foods, 46.1 per cent; buying foods directly from the farmer, 42.7 per cent; buying foods at wholesale prices, 41.0 per cent; preparing foods in advance, 29.8 per cent; and saving leftovers, 29.5 per cent. Other interesting sources included avoiding spoilage; securing own fish and game; rendering

The home freezer survey indicated that 89.8 per cent of the freezer owners quizzed were saving money from use of their freezers. In a breakdown of the saving question, 88.5 per cent reported that they were saving on meat purchases. This saving indicated that they were more than likely buying their meats in large quantities, perhaps at bargain prices, and then storing them until needed. The average amount reported saved was $14.51 per owner per month. This was the nationwide urban and rural average.

own lard; and preparing soup in quantity.

This question was then put to them, *"Approximately how much do you feel you save each month?"*

The average reported was $14.51 per owner per month. This was the nationwide average for both urban and rural users. Urban averages were $2.21 lower per month; rural averages $2.85 higher.

The next question entered another phase of freezer use, *"Are you enjoying a better variety and quality of food since you purchased your freezer?"*

A majority of 89.8 per cent indicated that they are eating a better variety and quality of food than before their purchase of a home freezer. Only 3.1 per cent answered "no," while 7.1 per cent made no answer.

On the subject of advance preparation of foods, one report received in this connection was interesting. This homemaker was making good use of her freezer to store foods prepared in advance. She explained that she cooked in large quantities on gloomy days so she could go to the beach on nice days or go visiting. She also added, I plan to take a vacation and I'm going to leave enough cooked food in the freezer for my husband so he won't miss me.

Another point emphasized by the survey was that homemakers who have come to know the advantages of freezing and frozen food storage are wanting larger freezers. In the words of one homemaker replying to the survey, "The only thing wrong with these home freezers, one never gets one large enough."

This finding emphasized in the Kelvinator survey was closely paralleled in a recent Hotpoint survey, which indicated that consumer preference for larger freezer sales in 1950 will be in 11-cubic-foot sizes or larger. This trend is closely paralleling the shift to larger refrigerators, and the increase in per capita consumption of frozen foods.

In 1947, approximately 89 per cent of freezers shipped were under nine cubic feet. In 1948, freezers under nine cubic feet made up 56 per cent of sales. Last year, there was a sharp rise in sales of larger sizes, with the 11- to 12.9-cubic-foot classification making up 22 per cent of the shipments. The 13- to 16.9-cubic-foot sizes became a factor with 16 per cent of the shipments.

An interesting commentary on freezer sizes can be seen in agriculture department recommendations for six cubic feet of freezer space per person, where a locker is not used to supplement the appliance in the home. The census bureau estimates that the average family in 1950 consists of 3.56 persons, indicating that the average family would need a freezer larger than 20 cubic feet. Hotpoint's continuing survey of consumer buying habits indicates that 58 per cent of home freezer owners do not rent locker space.

If a locker is to be used, the department of agriculture recommends a supplementary three cubic feet of home freezer space. This would mean a freezer of 11 cubic feet for the average family. The survey shows that 42 per cent of freezer owners rent locker space.

The survey showed that half of the company's freezer sales in 1949 were made by appliance dealers, indicating that it is still a specialty item and needs promotion. Half the sales are made in cities and towns under 10,000 population, while 22.9 per cent were made in cities over 100,000 population. A breakdown of sales by population shows 12.8 per cent in towns under 1,000, 14.2 per cent in 1,000 to 2,500 category, 2,500 to 5,000, 11.6 per cent; 5,000 to 10,000, 12.2 per cent; 10,000 to 25,000, 14.2 per cent; 25,000 to 50,000, 6.4 per cent; and 50,000 to 100,000, 22.9 per cent.

The survey also revealed new information on the type of customer who bought a freezer. Many typical freezer owners live on a farm and own their homes, which are valued under $10,000. They purchased the freezer from an appliance dealer and were most influenced by the company's reputation in their choice.

Studies made on freezer location preferences indicate that 75 per cent are installed in the basement, and 12 per cent in the kitchen. Another survey shows that 60 per cent of city dwellers

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How Freezers May Be Used to Best Advantage:

1. Storage of meat and poultry
2. Convenience
3. Advance preparation for emergencies
4. Storage of fruits and berries
5. Storage of ice cream
6. Availability of foods
7. Fewer marketing trips
8. Economy
9. Storage of fish and game foods
10. Storage of food bought in season for out-of-season supply
11. Wholesale buying of food
12. Storage of food bought at favorable prices
13. Time-saving
14. Storage of a variety of food
15. Easier preparation of foods
16. Storage of bread, pastries, etc.
17. Saving of leftovers
18. Storage of produce from own garden
19. Better flavor and quality

THAT EXTRA SOMETHING

. . Home laundry ensembles and demonstration services lure prospects

by Robert A. Latimer

◆ CUSTOMERS still shop for bargains. And smart dealers are learning how to give customers that "extra something" without getting into the realm of price cutting and profit sacrificing. Two excellent examples are promotions conducted recently by Oklahoma City dealers on home laundry equipment.

Both Pettee's and Sappington-Hickman-Rose have discovered that by letting the prospect feel she is getting a service or treatment not accorded her by other stores, they are able to close more sales.

A sure-fire method of stimulating the sale of home laundry appliances lies in creating a "home laundry ensemble" at an attractive price, and putting heavy promotion behind it, according to William D. Morris, appliance buyer at Pettee's, a large appliance dealership.

Using Special Offers

"While at first glance, clubbing together several laundry appliances at a flat price may seem like markdown operations, results are actually far from this," Mr. Morris said. "By that I mean that when a special offer is used to attract the homeowner in the first place, the chances are that husband and wife can be traded up to buying better-priced appliances—with the result that the ensemble originally featured as an eye-opener, actually accounts for only a small part of the sales volume accomplished."

A typical example of this was revealed recently when the Pettee store developed a "home laundry ensemble" which incorporated a popular conventional washing machine with wringer and feed pad, a twin-tub, white enamel wash unit, containing 38 gallons, two cases of a popular powdered soap, and several small accessories, such as soap trays, bluing dispenser, clothes line, etc. The laundry ensemble offered was priced at $94.95, and advertised as incorporating $121.58 worth of equipment.

To promote the special aggressively, Mr. Morris utilized direct mail to all prospects for laundry equipment on the store's list, and in addition, ran a huge display ad in two consecutive Sunday newspapers, approximating a full page.

Response, from the outset, was excellent, according to the appliance store. Results over the first two days of the sale were $4,600 in automatic home laundry equipment and conventional washing machines. Upon breaking down the results, Mr. Morris discovered that the low priced ensemble actually amounted to around 26.5 per cent of the total volume sold, while all of the remaining sales were in better priced washing machines, driers, wringers, sit-down ironers, etc., which were shown alongside the advertised model.

"While it is pure bargain appeal which pulls in the customers in the first place, their interest almost invariably can be switched to a better priced, more established brand," the buyer stated. "For example, one woman, living in a small, newly finished home, came in to buy the $94.95 ensemble. In discussion with the salesman, it was learned that she had a large basement laundry-room, with galvanized tubs already installed.

Bargains Build Sales

"When the salesman pointed out that an automatic home laundry unit could be installed with simple taps into the pipes, with no heavy expenses for anchoring, or other installation, the customer bought a $269.50 automatic washing machine, instead of the ensemble. A week later, she was sold an ironer, and is considered a good prospect for a drier as well. Total results were sales well in excess of $600, although it was the $94 item which originally brought her in."

Consistently good results with merchandising along these lines has led Pettee's to experiment with similar plans in refrigerator, electric range, and small appliance merchandising.

"Current economic conditions are such that the store must guarantee a saving to attract the prospect in the first place," it was indicated, "something like the leaders which are offered by food supermarkets, to lure traffic. Once inside the store, however, the customer's desire to possess the best in appliances, along with skillful salesmanship, will frequently swing the balance to better priced, longer profit items."

◆ ADAPTING automatic home laundry equipment sales technique to the point that there is absolutely no effort on the part of the prospect, is a clever stunt which has increased sales volume in this department by more than 60 per cent for Sappington-Hickman-Rose, Oklahoma City appliance dealer.

The firm, which has been a leader in the territory in refrigerator, home freezer, and other appliance sales, has concentrated in recent months on achieving the same results with washing machine promotion — particularly emphasizing complete model an-

tumatic laundries, including washer, ironer, drier, water heaters, and related equipment. To further promote the line, they have installed a complete model laundry, which goes far beyond the usual free demonstration offer in attracting housewives.

In September, with the model laundry completely finished, supplied with sufficient hot water that it may be demonstrated continuously through eight selling hours per day, the firm introduced "Free Wash Time"—a plan announced with colorful newspaper display ads, telephone calls to unsold previous prospects, and through window cards, handbills, and many other media.

"Free Wash Time" Campaign

Under the "Free Wash Time" campaign, developed by G. R. Smith, appliance buyer, Sappington-Hickman-Rose invites Oklahoma City housewives merely to telephone in whenever they have a bundle of laundry ready, and request "Wash Time Service." A pleasant-voiced telephone operator inquires when the housewife would like to bring her laundry in, and at the appointed time one of the store's experienced staff of outside salesmen calls to pick up the housewife, bring her to the store, demonstrate the equipment by actually washing the family bundle, and returning the housewife at the end of the demonstration.

"We have found that this idea shows a lot of advantages," it was indicated. "First, almost every woman who is still doing washing by hand, or even using new, conventional-type washing machines, hopes to eventually experiment with the automatic variety, when the time is convenient. Human beings being what they are, however, in many cases that time does not arrive — and what might easily be a ready sale, is left in the balance. Therefore, realizing that it is often difficult for the housewife to visit the downtown district for a demonstration, and that there are many who do not know that we operate such a service, we have bridged the gap between procrastination and actual demonstration by calling for the housewife and re-delivering her to the home at the end of the demonstration."

Results have been sensational to date, it was emphasized. With various promotional methods announcing the stunt to the public, and enthusiastic word-of-mouth endorsement from each housewife who was thus "honored," Sappington - Hickman - Rose has experienced so many requests for "Free Wash Time" that it has been necessary to schedule them tightly. A single ad, for example, drew so many responses that the entire staff of outside salesmen were forced to drop other activities, to concentrate on maintaining the good will of possible washing machine prospects. For this reason, ads are being run in the latter part of the week, after the usual Monday washday, so that the store can space out its demonstrations over the following week, and do away with embarrassing "pile-ups" and delays.

Salesmen Sell Convenience

The customer's bundle, no matter how large it may be, is cheerfully loaded into the automobile by the salesman, and the housewife's wishes are explicitly followed all the way through. For example, if the bundle contains bright-colored pieces of apparel which are likely to run because of fugitive dyes, the salesman obligingly puts through two separate runs, pointing out in the meantime the convenience of merely pushing buttons and switches, rather than laborious handling of water, soaps, etc.

As far as is practicable, the housewife is urged to carry out the entire washing program herself—which, of course, leaves the salesman free to wait upon customers in the store. However, she is thoroughly "checked out" with the result that the average housewife quickly gains confidence, and puts through her entire washing with little or no help.

"The customer who has thus received the opportunity to operate automatic laundry equipment on her own is invariably the best prospect," it was indicated. "We have sold a lot of laundry equipment to housewives who are visiting the store for the first time, and after one experience, enthusiastically bring their husbands down to the store to write up an order. On the other hand, we have some prospects who have put through several washings before ultimately making up their minds to buy. Taking the fair

(Continued on page 125)

Home Trials Sell Fans

◆ FREE trial home demonstrations are proving highly successful in selling the Westinghouse 16-inch Mobilaire double-duty window exhaust fan, it was reported by Walter B. Massenburg, manager of the Westinghouse fan department.

This is the 16-inch fan on wheels for home cooling, which because of its air-injector rings and deeply-pitched Micarta plastic blades, has the high air-exhaust capacity of 3,200 cubic feet of air a minute. It sells at a suggested retail price of $69.95.

A recent survey of dealers in several cities including Washington, D. C., and Baltimore, Md., revealed that home demonstrations were responsible for 81 per cent of the dealers' 587 Mobilaire fan sales.

Of the 525 fans put out on free trial demonstration, Mr. Massenburg said, 479, or 91 per cent, were sold. One dealer sold 110 Mobilaires by 114 demonstrations.

Customers generally are permitted to use the fans for cooling their homes for two or three days, but quite a large percentage of the dealers allow the fan to remain on free trial for more than three days.

One of the dealers surveyed uses his service department to sell fans. A service man who goes to a home to repair a range, refrigerator or washing machine carries a Mobilaire along with him. He demonstrates its ability to cool the home night and day, and leaves it behind on a trial basis if the homeowner is interested. This dealer reports obtaining excellent results from this method.

CANVASSING METHODS

. . Seven dealers answer questions about how they handle outside selling

◆ "WHAT ARE YOU doing in the way of canvassing? What particular appliances are you pushing in this home selling? Are you following hot leads, or do your men 'cold canvass'? How many men do you have out on the street? Do you rotate your salesmen—so many days canvassing and home selling, so many days on the floor of the store?"

These five questions were put to seven appliance dealers in the South's largest city, New Orleans, La. Whether to canvass or not, whether there should be home selling to hot leads, or whether the salesmen should stick to selling in the store itself—these are important questions that most appliance dealers are facing today. Competition is stiffer, much stiffer. The customers are choosier and more reluctant to part with their money. So many dealers have gone back to the prewar practice of sending salesmen out to knock upon doors. Other dealers send their men out, but only to follow up leads. A few stick primly in their stores.

Which course should you take? Here are the measures used in this competitive year by seven alert dealers. They represent a cross-section of the Crescent City's appliance dealers. Some are large, some small. The seven are Lambert Appliances, City Appliances, Barnett's, West Side Appliances, Kirschmann's, Brown Appliance Store, and Labiche's Modern Appliances.

Charles Gay, general manager of City Appliances, 4126 South Claiborne Ave., is against cold canvassing, and he cites a good reason for his store's policy.

"There's a bad psychological disadvantage to cold selling, where the salesman knocks upon any door and then launches into his spiel," Mr. Gay declares. "The disadvantage is this: the salesman cannot know whether he has hit Mrs. Prospect at a right time or at a wrong time—and there are many more wrong hours in a day than there are right hours. During a wrong time, the greatest salesman in the world couldn't peddle a refrigerator for five bucks. I'll illustrate what I mean by right and wrong times.

"The average housewife has a lot to do during the day (and housewives are the people you meet when you go out to cold canvass). She has to change the baby. She has to cook. She has washing to do, ironing to do, clothes to hang out on the line. She has telephone calls to make to the butcher, the baker, and the department store. She has a lot of things to do, and, although the average husband isn't quick to admit it, the housewife has little leisure time.

"If our salesman were to knock upon Mrs. Housewife's door when she is busy with the baby, she isn't going to listen regardless of what he has to tell her. The same is true of other things: she has chores, and she is not in the mood.

Buying Habits

"Another point is that the housewife, by herself, seldom makes the buying decision. Usually, that is done by her husband. So cold canvassing, even in the few instances where it results in a sale, is a matter of calling, calling back, and maybe calling two or three more times.

"Cold canvassing simply isn't a profitable procedure. We do go out on home selling calls. But only in following up leads from telephone inquiries, advertisement answers, or sales that weren't closed on the floor. They don't have to be truly hot leads; luke warm is enough. But no cold canvassing for us. Our salesmen rotate their time, mornings on the street, afternoons in the store."

R. Magoni, home appliance sales manager of Barnett's, 600 Carondelet St., in New Orleans' main business and shopping district, disagrees with Mr. Gay. He carries the sales campaign to the customer's front door.

Competitive Advantages

"Yes, we're doing some cold canvassing," Mr. Magoni says. "As a matter of fact, we're doing a lot of on-the-street selling. You can't wait—in a competitive market—for the customer to come to you. We try to make as much of our on-the-street selling prospect calling as we can; in other words, we follow up all leads we can get. But we also do some cold canvassing. We sell all appliances in this kind of approach. There are four Barnett's salesmen outside the store at all times. We rotate them, but not on any fixed basis; sort of as the situation warrants. On busy floor days, we keep more salesmen inside. Other days, we'll send more of them out to sell."

Herbert Lambert, owner of Lambert's Appliances, 1803 Jefferson Highway, has two salesmen working for his store. "One stays in the store, while the other goes out making calls," Mr. Lambert explains. "We follow up substantial leads only. No cold canvassing. Only those where there is definite possibility of making a sale. The salesmen switch around, and they push all appliances."

A. H. Gluth, sales manager of the Brown Appliance Company, located at 4112 Magazine St., in an uptown business district, is another advocate of strong out-of-the-store selling, including cold canvassing.

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CORRELATING SELLING PROBLEMS

"Do's and don't's" of grocery sales form a basis for the second story in this picture series based on the "sales training seminars" of the Electric Institute.

by Lee Salsbery

DON'T

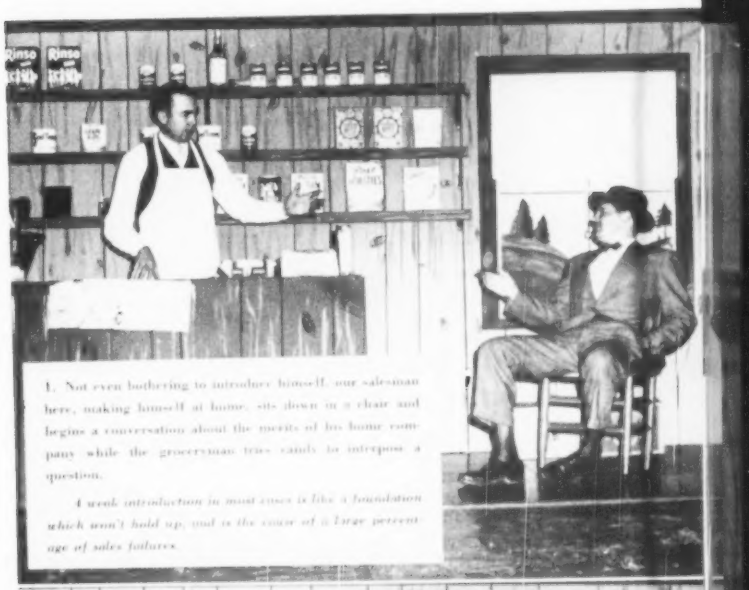
◆ A SALESMAN must realize that all selling is related and that by constantly being on the alert, observing the sales techniques in other fields, he may often see a variation in technique that will clinch his own sale.

The salesman must be a good showman. He must dress in good taste and always be immaculate. His diction must be simple, direct and sincere.

Whether he is selling automobiles, groceries, or electrical appliances the fundamental rules of selling are basically the same. The salesman must have an expert knowledge of his product to be able to convince the prospective customer of his need for it, to prove that it is the most economical, and that it will afford more safety and prestige than any other product. He must have a genuine interest in people and have an understanding of how they tick. A salesman must be versatile, able to custom-build his sales story to fit the situation.

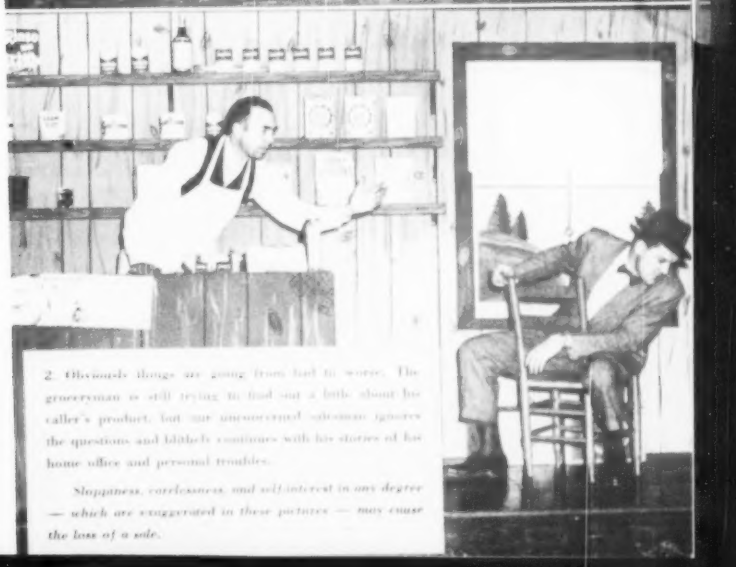
To make the most of his time the salesman makes a preliminary survey, if it is possible, to determine the prospect's need and obtain whatever information he can get about the prospect himself. He must also be familiar with his customer's problems and should be able to make helpful suggestions to the customer. The more data he has about the prospective customer the better prepared he is to make the sales approach.

Creative salesmanship is the happy combination of friendly interest and co-operation, with the customer's benefit the objective.



1. Not even bothering to introduce himself, our salesman here, making himself at home, sits down in a chair and begins a conversation about the merits of his home company while the groceryman tries canals to interpose a question.

A weak introduction in most cases is like a foundation which won't hold up, and is the cause of a large percentage of sales failures.



2. Obviously things are going from bad to worse. The groceryman is still trying to find out a little about his caller's product, but our unconcerned salesman ignores the questions and blithely continues with his stories of his home office and personal troubles.

Sloppiness, carelessness, and self-interest in any degree — which are exaggerated in these pictures — may cause the loss of a sale.

DON'T

3. Our salesman is becoming more aggressive now, but unfortunately in the wrong direction. Having helped himself to a doughnut, he has completely aroused the ire of the man who might have been a customer.

The salesman must refrain from taking liberties with his prospective customers unless invited to do so, for such liberties are sure to kill a sale.

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Because of what happened to the hapless salesman after this, it is better to leave the poor chap and see how the merchandise might have been sold.

DO

1. A friendly and courteous introduction, a pleasant smile, and our salesman is off to a good start.

In any form of selling, a pleasant approach, a pleasing appearance, and a good introduction form the foundation for the sales approach.

DO

2. Already he has his prospective customer interested, examining the difference between his company's product and the other company's product.

A prepared sales talk flexible built to expand in any direction, showing the advantages of his product to the customer is a big step in the right direction.

◀ DO

3. Here he shows his customer how to sell a different product, something his company doesn't handle.

Going still further, showing a customer how to sell a product unrelated to his is a splendid way of building friendship.

DO ▶

4. Standing by in the background, he watches the genial groceryman sell a customer with his new technique.

If your prospective customer is pleased and in a mellow mood, it is much easier to get his name on the dotted line and once that name is on the dotted line, while he is in a happy frame of mind, leave before he realizes that he has signed.

(The cooperation of Electric Institute members who posed for these exclusive ELECTRICAL SOUTH photos is sincerely appreciated. In the photo at right, left to right, are Whit Watkins, sales training director, The Electric Institute of Washington; Mary Maurer, assistant director of the Electric Playhouse of the Institute; and Waggie Lowder, general manager, Colonial Fuel Oil Co., Washington, D. C.

◀ DO

5. Having gotten the order, he makes his exit, the groceryman calling after him to say that he really didn't need it. But then, so what!

When a sale has been completed, it is time to leave. Don't Linger.

COMMERCIAL REFRIGERATION

Business forums attract commercial prospects to this dealer's display

by Albert S. Keshen

◆ THAT TAROT SET which confronts every salesman: how can I get my prospect away from his business long enough to let me explain my electric appliances—has been cracked to some extent by Abbott Refrigeration Co., Inc., 804 Rhode Island Ave., N.E., Washington, D. C. They've organized the Abbott Businessmen's Forum with a nationally known speaker, free refreshments, and a first-hand opportunity to look over the firm's wares by holding the assemblage in their own showroom.

The first session began early this year. Heading the agenda was Arthur T. Edinger, marketing specialist of the U. S. Department of Agriculture, the country's leading expert on the merchandising of meats. His subject, "Retailing Pre-Packaged Meats," was important enough to merit the attention of every grocer who sells retail meat cuts.

Martin B. Belinc, sales manager, Abbott Refrigeration Company, of Washington, D. C.

These persons, and there are about 1,500 of them considered as potential appliance buyers in the greater Washington area, received an attractively printed invitation in which was enclosed a return pre-paid postcard to indicate whether they would attend. About 200 of them replied that they would.

The Abbott showroom was especially decorated for that occasion. In the front part were placed portable seats while the walls were lined with models of the firm's appliances. The rear was partitioned off by drapes and was used for refreshments with a counter on which were cold drinks, crackers, cold cuts, and other edible knick-knacks, all free for the taking.

The showroom was packed with an audience which followed Mr. Edinger's talk intently and participated in the open forum which

Abbott Refrigeration Co., Washington, D. C., got their prospects away from their businesses long enough to explain commercial refrigeration to them by holding businessmen's forums in Abbott's main showroom. The appliances shown in the photograph at the left were placed against the walls, and the showroom was cleared for chairs and the speaker's table with a buffet counter in the rear.

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followed. The business part of the session took about an hour. But many lingered on for the social aftermath, greeting friends and business acquaintances, partaking of refreshments, and inspecting the merchandise with which they were surrounded. Even competing equipment dealers from as far away as Baltimore were on hand to see what it was all about and perhaps to pick up some ideas for themselves.

No attempt was made to inject a commercial atmosphere into the affair. There was no coat-pulling by salesmen, nor order blanks passed around. All of the equipment, however, was kept in operating condition and illuminated. Some of the visitors were highly impressed with what they had seen. Later one of them placed a $15,000 order for a complete store installation and several telephoned orders afterward.

Although no newspaper advertising was engaged in, to maintain the atmosphere of non-commercialism, there were some write-ups about the affair in the local newspapers which proved more beneficial even than paid space.

"The whole project cost us about $200 and every bit of it was well spent," said Martin B. Beline, sales manager. "All we had to pay for was printing and mailing the invitations. The rest was given us free. Grocery and meat wholesalers who wanted the trade to become familiar with their crackers and cold cuts supplied them in quantity. Even frozen fruit juice was furnished gratis by the distributor who was anxious for his prospects to taste the beverage and see how his machine operated in dispensing it."

The most beneficial result for the firm was the opportunity to demonstrate its wares in a socially congenial atmosphere far from the distractions which are usually found in the prospect's place of business. For weeks afterwards the forum was an invariable topic of conversation when the firm's salesmen called to talk business. Thus it helped to introduce them to the people they wanted to meet.

Impressed with the initial success of the venture, Mr. Beline is making plans to extend it to other specialized lines of business. The restaurant people, for example, will have a forum of their own with a prominent speaker on their business, and after a brief lapse it will be extended to other groups which use electrical appliances.

Another evidence of the firm's energetic promotion procedure is its policy of free trial installations on self-contained refrigeration items. The policy calls for setting up the equipment on the customer's floor for 10 days without obligation. If he is satisfied with it, he signs the order; if not, it is returned to the firm at no expense.

The first result of this experiment was an order from Winer's Market, 532 8th St., S. E., Washington. The grocer, Harry Winer, was at first skeptical as to whether a self-serve freezer would pay in the sale of meats and vegetables. Finally he consented to have a model put up on the trial basis. At the end of the experimental period his sales mounted so rapidly that he quickly called the dealer's office to have them send a man over immediately so that he could sign on the dotted line.

"Our 10-day trial offer, however, is not a blanket measure," cautions Mr. Beline. "That is, we don't make it to everybody but narrow it down to a select list of prospects whom we believe will be responsive to it, preferably the small independent grocer or butcher who we know will get more business through such installations."

The Abbott Restaurant Planning Service is another integral part of the organization's setup. Under it the dealer undertakes at no charge to confer with prospects on steps to make his restaurant more efficient and attractive by showing him ways to improve his dining room, kitchen, and other traffic points after a careful analysis of individual requirements. This offer has been given widespread publicity by the Washington Restaurant Association and advertising space in its organ, "The Restaurateur."

Trade-ins are no longer a problem under Abbott's plan of operation. When a prospect tells the firm's salesman that age-old argument, "What am I going to do with my old equipment after I buy your new product?" he is answered with the company's fol-

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Newspaper advertising used by Abbott puts their message across. This ad was one of their most effective and readable insertions. The firm's Investment Analysis Service, described in this ad, shows a merchant how to determine the amount of profit to expect from air conditioning.

News Roundup

Youngstown Utilizes Miniature Dishwashers

◆ NEARLY 7,000 retail dealers across the nation put the Youngstown Kitchens Jet Tower dishwasher on display for the first time recently and went into action with a store traffic promotional campaign.

Featuring the promotion, which includes national and local advertising, live display units, and distribution of gravure broadsides, is one of the year's most novel devices. It is a miniature dishwasher that actually operates, using the new Youngstown principle of automatic dishwashing found in their units — a 48-inch electric sink and a 27-inch automatic model.

Called the Jet Tower, Jr., the miniature is a scale model of the 27-inch automatic dishwasher. It is 10 inches high and comes with a set of plastic miniature dishes, pots, and pans, and a plexiglass lid which permits view of the water action.

Just as in the actual dishwasher, the water action is provided by a square metal tube, called the Jet Tower. Water (from a hose connected to the sink faucet) is forced through the tower, causing it to revolve and shooting jets of water onto the dishes racked around the tower.

The Jet Tower, Jr., is used in traffic stimulating contests being conducted by many Youngstown distributors and their dealers. Winners of the dealer contests are given the miniatures, making them eligible for regional contests in which the grand prizes are 48-inch Youngstown electric sinks.

The "juniors" are designed also as home demonstrators, for action window displays, and as toys. A large number of dealers are using the unit equipped with a tiny electric pump which operates the model when a button is depressed.

Four of the Jet Jrs., are in the initial dishwasher dealer promotion package. Other items include equipment for setting up a live action display with a 27-inch automatic unit, window posters, consumer literature, mail stuffers, and gravure broadsides. Nearly 3,000,000 broadsides are being distributed by dealers and Youngstown distributors.

Miniature working models of the Youngstown Kitchens 27-inch automatic dishwasher highlight the promotional campaign introducing the new appliance. The Jet-Tower, Jr., dishwasher racks are loaded with tiny plastic dishes, which fit inside the tub. Water action is provided by the jet tower, which spins whirling streams of water and shears soil from the dishes. The Jet-Tower, Jr., is designed for use as a demonstrator, for window displays, and as a toy.

Housewares Trend Slated to Continue

◆ SALES OF electric housewares by the Westinghouse Electric Corporation in the third and fourth quarters of 1950 are expected to continue the trend started in the second quarter of this year by running "substantially ahead" of the same period in 1949, it was reported recently.

Ralph Z. Sorenson, manager of the company's electric housewares department, said that response from buyers and distributors "has confirmed our expectation for the second half of this year."

The Westinghouse official said that "enthusiastic interest" had been shown in the seven new products displayed by his company at a recent housewares show.

Buyers were particularly interested, he said, in the new Westinghouse blanket introduced.

Phonevision Tests Scheduled for October

◆ THE Federal Communications Commission has approved October 1, 1950, as the starting date for the 90-day limited commercial test of Phonevision authorized earlier this year, it has been revealed by Commander E. F. McDonald, Jr., Zenith Radio Corporation president.

The test will be limited to 300 Chicago families and will be conducted in co-operation with the Illinois Bell Telephone Company through Zenith's experimental television station, KS2XBS, which has been moved to a new location on the roof of the Field Building at 135 South LaSalle St.

The 300 test families were chosen by the National Opinion Research Center of the University of Chicago from approximately 51,000 families who applied for the opportunity to see good motion pictures on television receivers in their own homes at a cost of $1.00

per movie. The test sets will be standard television receivers, some Zenith and some other makes, which will also be capable of receiving Phonevision.

During the test it is planned to broadcast a different feature movie each night for 90 days on Channel 2. All television sets within range of the station that are tuned to Channel 2 will receive the picture, but in a blurred, jittery, unintelligible form. Only the television receivers equipped for Phonevision, which are used in this test will be able to receive a clear picture of the test broadcasts.

Test families who wish to "go to the theater at home" will call their Phonevision operator and tell her they wish to see the Phonevision broadcast. A decoding signal will then be sent to their homes over telephone wires which will make their reception of Channel 2 as clear as any other telecast. Without this decoding signal their sets will receive the same blurred, jumpy image seen on other television receivers tuned to Channel 2.

Each test family will be charged a fee of $1.00 for every feature movie ordered and seen on Phonevision. There will be no other charge to test families in connection with the test, and each family is privileged to see as many or as few movies as it wishes.

EEI Announces Farm Handbook

◆ The Edison Electric Institute announces publication of the "Farm Electrical Equipment Handbook." This 224-page, 6- by 9-inch volume presents in simple non-technical language descriptions of electrical farm equipment, together with many illustrations and the purchase price ranges and kwhr consumption of each piece of equipment. It also contains a list of manufacturers for each piece of equipment discussed and an extensive bibliography of over 450 publications dealing with the applications described.

Primarily designed as a practical working tool for rural representatives and county extension workers in the broadening of the use of farm electrical equipment, vocational agricultural teachers and students alike should find that the comprehensive coverage of the book makes it extremely useful as a text and a reference. Farm electrical equipment dealers should also find the "Farm Electrical Equipment Handbook" valuable both as a sales stimulator and as a practical reference work.

Orders for the "Farm Electrical Equipment Handbook" should be addressed to Edison Electric Institute, 420 Lexington Ave-

1951 SENTINEL LINE PREVIEWED — Southeastern Sentinel distributors attending the meeting held at the Atlanta Biltmore Hotel recently were shown Sentinel's ten new 1951 television models and their new radio line. Distributor attendance of 98 per cent was on hand for the meeting, which included, left to right, Bob Parks, of Sentinel; E. G. May, Sentinel general sales manager; and Carl Lewis, Sentinel Southeastern sales representative.

SOUTHERN MEN AT TELECHRON CONFERENCE — The South and Southwest were well represented at the annual sales conference of Telechron, Inc., held at the Forest Hills Hotel, Franconia, N. H., recently, where plans for the fall and Christmas sales program were presented. Left to right are Paul Mathews, M. C. Huie Co., Dallas; H. K. DeWees, H. K. DeWees Co., Atlanta; R. L. Woodward, manager of marketing, Telechron; E. G. Newbill, H. K. DeWees Co., Atlanta; C. W. Miller, H. K. DeWees Co., Atlanta; A. F. Fisher, president of Telechron; R. D. Esler, sales manager, Telechron; Doug Barrow, M. C. Huie Co., Dallas; C. R. McRae, M. C. Huie Co., Dallas; M. W. Ford, H. K. DeWees Co., Atlanta; and J. C. Armstrong, H. K. DeWees Co., Atlanta.

New York 17, N. Y. The price of single copies is $2.25 postpaid. A schedule of prices may be obtained on request to the Institute.

Southern Appliances Purchases New Building

◆ One of the largest wholesale electric appliance distributors in the two Carolinas, Southern Appliances, 517 E. Trade and 315 E. 5th Sts., Charlotte, N. C., has purchased the building at 1000 W. Morehead St., and the adjoining vacant property, to be used as its future headquarters.

Southern Appliances distributes a wide range of appliances for modern living. Calvin D. Mitchell is president and L. L. Miller secretary-treasurer of the firm, which serves approximately 2,000 Carolinas dealers.

The lot on which the building stands is 100 by 225 feet, and the building itself is a modern structure with offices, display rooms, modern heat, lighting, and plumbing facilities, electric freight and passenger elevators, and a private railway siding on the Piedmont and Northern. It is situated in one of the city's fastest growing and most important business and industrial sections.

Among the lines handled by Southern Appliances are Bendix home laundry, Leonard refrigerators, ranges, and home freezers, Kresky oil floor furnace, Speed Queen conventional washing machines, Capehart television and radio phonographs, Estate sewing machines, and Monarch electrical housewares.

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GOING OVER THE FINE POINTS — Evan Moore, right, who achieved national recognition in 1949 for his outstanding Frigidaire selling job at Joske's, San Antonio, Tex., where he is merchandising manager, is shown inspecting a new 10-cubic-foot refrigerator equipped with a separate locker top, on display at Frigidaire's exhibit during the recent Summer Furniture Mart in Chicago. Going over some of the fine points with Mr. Moore is Joseph Rushton, Frigidaire's major dealer division sales manager.

Summary of Electrical Appliance Sales by States*

States	Refrigerators 1st Half 1950	Refrigerators 1st Half 1949	Ranges 1st Half 1950	Ranges 1st Half 1949	Water Heaters 1st Half 1950	Water Heaters 1st Half 1949	Home Freezers 1st Half 1950	Home Freezers 1st Half 1949
Alabama	49,847	44,402	19,610	13,883	3,898	3,819	2,798	(Sales data not available for 1949)
Arkansas	42,465	45,889	3,625	3,503	1,037	1,033	2,847	
Delaware	5,319	4,021	1,748	994	672	522	360	
D. C.	26,448	16,654	4,203	2,387	1,298	863	1,113	
Florida	56,441	35,889	27,247	13,653	9,779	6,266	2,771	
Georgia	57,377	47,267	24,120	16,216	7,863	5,272	3,480	
Kansas	27,801	27,943	6,442	4,031	1,283	993	2,450	
Kentucky	44,544	44,206	12,144	8,953	2,833	2,193	2,156	
Louisiana	47,429	49,740	2,433	1,481	564	419	1,721	
Maryland	33,037	22,804	5,623	4,002	2,260	1,884	1,797	
Mississippi	33,975	34,366	6,107	4,691	1,100	955	2,708	
Missouri	86,090	69,072	15,839	11,237	5,979	5,145	5,359	
No. Carolina	73,651	56,362	34,377	20,771	15,438	8,447	3,914	
Oklahoma	45,971	40,501	3,179	2,227	434	484	2,482	
So. Carolina	34,331	25,880	17,214	11,358	6,382	4,006	1,983	
Tennessee	74,311	67,960	29,492	25,725	8,037	6,170	3,796	
Texas	166,007	144,577	16,896	8,928	3,518	2,559	11,891	
Virginia	41,949	36,400	16,919	11,240	7,258	5,997	2,439	
West Virginia	35,970	36,026	11,918	8,604	3,254	2,604	1,746	
Total South	982,972	849,959	269,134	173,879	82,885	59,657	60,808	
% Inc. in South	15.6		54.8		38.9			
U. S. Outside South	1,445,622	1,081,789	390,314	254,702	138,096	111,723	97,318	
% Inc. Outside South	33.6		53.2		23.6			
U. S. Total	2,428,594	1,931,748	659,448	428,581	220,981	171,380	158,126	
% Inc. in U. S.	25.7		53.9		28.9			
South in % of U. S.	40.5	44.0	40.8	40.6	37.5	34.8	38.5	

*The unit sales summary given above is based on figures released by the National Electrical Manufacturers Association. They do not reflect the sales of all manufacturers, but are the distributor and dealer sales of the following participating manufacturers: 12 refrigerator manufacturers; 19 range manufacturers; 22 water heater manufacturers; and 19 home freezer manufacturers. The sales reported represent a substantial percentage of total sales, and the comparison of the two periods should indicate industry sales trends.

Silent Salesmen

Arvin — Display Package

A COMPLETE new series of promotional pieces and pointed-sales aids designed to accelerate inquiry and sales this fall and winter has been announced by Arvin Industries, Columbus, Ind.

The new display package is headed by the Arvin Salesmaker No. 5807, a shell and background piece for mass-displaying the complete line. This display piece is constructed of masonite and metal tubing with vinylite background. It is six feet high with shelves 30 inches wide and 10 inches deep. End units may be placed on both sides of the vinylite background, back-to-back to form an island, or at right angles around a corner of a pillar.

Also included in the display package is a variety of window streamers, window or counter cards, silk banners, illuminated and fluorescent identification signs, a continuous motion, full-color rainbow radio display, and a special folding chart for TV demonstration.

In addition, the company is making available a thoroughly revised outlay of radio and television literature for dealer use. This includes line broadsides and folders in color, specification sheets, and envelope stuffers, together with a leather-bound catalog describing in detail every model in the Arvin radio and TV lines.

Following its traditional policy, Arvin in most cases makes its material available to distributors and dealers on a cost basis. In some instances, the material is issued without charge when minimum purchases of merchandise are made.

Hotpoint — Showmanship Kit

A NEW "Showmanship" Kit of demonstration devices that permits retail salesmen to dramatize outstanding features of major appliances in the home and store is being introduced to dealers by Hotpoint, Inc., 5600 W. Taylor St., Chicago 44, Ill.

The kit, its sponsor finds, is a make-up case packaged 15 items with which the salesman can do 17 different demonstrations on features of the company's full line of appliances for kitchens and home laundries.

For example, the over-flow timing and solenoid valve principles of the company's automatic clothes washer are easily explained by pouring a little sand and ground cork into a glass of water. The salesman points out that the sand settles to the bottom where it is removed, while the ground cork floats on the surface and is removed by over-flow timing. A few drops of green vegetable dye placed in water in an operating machine with a glass top effectively shows the thorough rinsing and spin-drying actions.

To demonstrate the advantages of electric cooking, the salesman puts out a candle by holding a glass upside down over the flame to show that an open flame needs oxygen to burn, and therefore removes it from the kitchen. By contrast, he plays on an electric light on an extension cord to illustrate that electricity is cool, flameless, and healthful.

The kit contains, in addition to many other items, samples of lemon juice and alcohol for demonstrating the acid-reacting nature of porcelain and baked enamel finishes on small metal panels. Lipstick and nail polish smeared on appliance surfaces are removed with a razor blade or damp cloth to dramatize the durability as well as stain-proof character of the surfaces.

Universal — Stroke-Saw-R Display

THE FREQUENCY REPORT the new Stroke-Saw-R iron, Universal has prepared for its dealers a special demonstration package comprised of an illuminated display in full color, a special demonstration table, and demonstration and give-away handkerchiefs.

The brilliantly illuminated display features a full color reproduction of the Stroke-Saw-R iron at the top with three flashers showing the four drop

design of the sole plate, the extra-size 35-square-inch sole plate, and the new wide gripping bevel.

A special demonstration table on the four drop sole plate design, which can be viewed from four sides, and counter-clearances the illuminated display repeats the flasher theme and features consumer testimonials acquired from field tests, Guarantee by Good Housekeeping and listing by the Underwriters' Laboratories are also featured, as well as the special ten-day free trial guarantee.

A specially designed mail-back envelope, with eight ordinary iron impressions on one side and five Stroke-Saw-R impressions on the other, will show consumers the saving in strokes that can be obtained with this new iron. Fashion colored handkerchiefs will be offered with each iron purchased.

This display package available from Arvin Industries includes shelves and background for mass-displaying the complete Arvin line.

Names and Faces

Appointment of **Edwin C. Pease** as advertising manager of **Telechron Inc.**, has been announced by **Russell T. Woodward**, manager of marketing. In his new position, Mr. Pease will be responsible for the company's advertising on both industrial and consumer products.

Mr. Pease formerly directed the advertising at James Lees & Sons Co.

Edwin C. Pease

Prior to that he was vice-president in charge of marketing for Comprehensive Fabrics, Inc., national distributors for B. F. Goodrich's Koroseal. Mr. Pease was with Talon, Inc. for nearly 14 years, throughout practically all of which he served as a member of the advertising committee. He is a graduate of the Wharton School of Finance and Commerce, University of Pennsylvania.

•

The Finders Manufacturing Co., of Chicago, has announced the appointment of **Knox Fitzpatrick**, of Atlanta, as southeastern representative for the company to handle the full line of Hollywood electric housewares, including the new deep-fat fryer introduced recently.

•

James D. Secrest, who for several years has been director of public relations for the **Radio-Television Manufacturers Association**, has assumed the duties of secretary and general manager of RTMA, succeeding **Bond Geddes**, who retired as executive vice-president after 23 years service with the association.

Mr. Geddes will continue to serve RTMA, however, as a consultant under an arrangement with the RTMA board of directors effected following his request for retirement.

Before joining RTMA in March, 1945, Mr. Secrest was in charge of publicity and advertising for the wartime pulpwood production campaign conducted by the War Activities Committee of the Pulpwood Consuming Industries, with headquarters in New York City.

•

An appointment to the sales and service staff of **American Kitchens** has been announced by **F. F. Duggan**, general sales manager of the **American Central Division-Avco Manufacturing Corporation**.

William H. Neil, who has an extensive background in the specialty appliance field, has been appointed district manager for the Dallas district and will maintain headquarters in Dallas, Mr. Duggan said. Mr. Neil will report directly to **Roy S. Gallagher**, Southern Regional sales manager for American Kitchens in Atlanta.

•

Parker H. Ericksen, vice-president in charge of sales of **Bendix Home Appliances, Inc.**, South Bend, Ind., has announced the resignation of **J. L. Armstrong**, field sales manager. Mr. Armstrong has accepted an executive post with Crosley Motors, which is not related to or affiliated with Crosley Appliance Division of Avco.

•

Edward K. Solomon has been appointed district appliance sales promotion manager of the Atlanta, Ga., southeastern district sales office of the **Westinghouse Electric Appliance Division**, according to an announcement by **T. J. Newcomb**, division sales manager. He succeeds **J. V. Russell**, who was recently appointed to the position of southwestern district appliance manager.

Mr. Solomon, a native of Troy, Ala., was formerly sales promotion manager of the Carolinas district for the Westinghouse Electric Supply Company's appliance sales division. He was with the supply company since 1934 and was appointed as sales promotion manager for them in 1947. He attended the Eufaula, Ala., elementary and high schools and the University of Alabama.

Edward K. Solomon

•

Louis H. Miller has been appointed manager of marketing of the **General Electric Company's** Appliance & Merchandise Department, it has been announced by **H. L. Andrews**, vice-president.

At the same time, Mr. Andrews announced that **Charles K. Rieger** has been appointed manager of the household refrigerator division, succeeding Mr. Miller, and **Robert E. Boian** has been named to succeed Mr. Rieger as manager of the heating device and fan divisions.

Mr. Miller, who succeeds **Charles R. Pritchard**, newly elected president of General Electric Supply Corporation, will be responsible not only for all direct sales activities of the department but also for consumer market and distribution research, advertising and promotion, product planning and appearance design, production schedules, and product service. He will also be a member of the department's advance engineering committee.

•

Appointment of **J. V. Baxter** as regional sales manager for the southwest territory has been announced by **Robert M. Mitchell**, general sales manager of the **Whirlpool Corporation**, St. Joseph, Mich., manufacturer of home laundry equipment.

Mr. Baxter, who will make his headquarters in Dallas, will supervise Whirlpool's sales operation in Texas, Arkansas, Western Tennessee, Louisiana, New Mexico, and Mississippi.

Mr. Baxter comes to Whirlpool from Servel, Inc., where he was district sales manager. Earlier, he was associated with the Dallas Gas company in appliance sales work. He succeeds **George C. Howell**, who resigned.

•

Appointment of **J. R. Chapman** as general manager in charge of all service operations, has been announced by **Elisha Gray**, president of the **Whirlpool Corporation**, St. Joseph, Mich.

Mr. Chapman, a veteran service engineer, is taking over a newly established position. His duties will include direction and integration of all functions of the service department, field service, and sales promotion of service parts. Creation of an executive position to combine these duties under one man has become necessary as a result of the company growth and expansion of the Whirlpool national sales organization.

Chapman comes to Whirlpool from Sears, Roebuck & Co., where he became familiar with the company's

Why you should be in business with Betty Crocker . . .

Betty Crocker is a "buy-word" for millions of American women. Twenty-seven years of service to homemakers have made her not only America's best known homemaking authority, but *America's greatest single selling force*. Her ever increasing influence on women's buying habits moves millions of General Mills products into American homes every year . . . this same influence has already been a major factor in selling millions of General Mills Tru-Heat Irons, Steam Ironing Attachments and Double Automatic Toasters.

Take advantage of the selling power of this "super" saleswoman by featuring General Mills Home Appliances sponsored by Betty Crocker.

JOIN IN THE BETTY CROCKER FALL AND CHRISTMAS SELL-A-BRATION AND

GET THESE BUSINESS-BUILDERS FREE!

NEW 6-COLOR ALL PRODUCT DISPLAY Ask your distributor how you can get yours.

NEW POCKET-SIZED TRAINING COURSE used by dealers to brief sales people, sales people to show customers.

NEW BETTY CROCKER FACT SHEET—fact packed with information on America's greatest single selling force.

COLORFUL SPEC SHEETS on Automatic Toaster, Tru-Heat Iron and Steam Ironing Attachment give important selling information in words and pictures.

ATTRACTIVE CONSUMER FOLDERS for counter giveaways . . . a generous supply in every promotional package.

NEW CUTS AND MATS CATALOG—includes radio commercials, copy and layout suggestions for complete ads.

NEW General Mills Ad Campaign is BIGGEST EVER!

Full color ads will appear regularly in the Saturday Evening Post, American Weekly and Woman's Home Companion. Other ads will run in newspapers and leading farm publications . . . And there'll be *extra* commercial time on Betty Crocker's daily radio program . . . PLUS commercials on Betty Crocker's sensational *new* Television Show!

General Mills Home Appliance Dept., 1620 Central Avenue, Minneapolis 13, Minnesota

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H. A. Costello

washers, dryers, and ironers. He was with Sears for 17 years, starting as a radio repair man in the Gary store in 1933. His final position was senior engineer and first assistant to the national supervisor of all Sears service departments.

•

Elmer J. Zenner has been named regional representative by **Hamilton Beach Company, Division Scovill Mfg. Co.**, for southern Texas. Mr. Zenner's headquarters are at Bellaire, Texas.

•

The appointment of several new regional sales managers in the **Youngstown Kitchens** field sales organization, announced recently by **Charles A. Morrow**, vice-president in charge of merchandising, included **William Barnett, Jr.**, who formerly headed the Youngstown Division of South Texas Appliance Co., San Antonio distributor. He has taken over a territory including San Antonio, Houston, Dallas and Fort Worth.

•

W. H. Lassiter, Jr., of Richmond, Va., has been appointed direct factory representative for states in the Middle Atlantic area, as announced by **J. Harold Overmyer**, general sales manager for **Revco, Inc.**, Deerfield, Mich.

Mr. Lassiter, a native of North Carolina but for the last five years located in Richmond, will direct his efforts for Revco on the Chill Chest line of farm and home food freezers.

Concentrating on the new line of 8-, 15-, and 23-cubic-foot models in the Chill Chest line, Mr. Lassiter's background of experience in sales and merchandise will be helpful to both distributors and dealers in this area, it was stated.

•

"Rapid sales expansion due to the complete line of Deepfreeze appliances which now includes refrigerators, ranges, water heaters as well as the Deepfreeze home freezer, accounts for the appointment of several men to new positions," **Ben G. Sanderson**, general sales manager of the Deepfreeze Appliance Division, Motor Products Corporation, North Chicago, Ill., announced recently.

F. L. Sacha has been appointed assistant general sales manager. His former position, that of manager of range and water heater sales, has been filled by **F. C. Lowber**.

New manager of home freezer sales is **W. S. Hall**. **L. W. Wells** takes over Mr. Hall's former post, as Kansas City district sales manager.

W. D. Randolph has been named district sales manager at Memphis, Tenn., a newly created district in the southern region.

W. A. Costello has been appointed sales promotion manager, a newly created position. **G. L. Harmanson** has joined the sales promotion department.

•

The appointment of **Eugene Blumenschein** as sales manager of the Electrical Division of **Nesco, Inc.**, has been announced by **William P. Howlett**, executive vice-president.

Mr. Blumenschein, for the past 14 years, has been serving as Chicago District manager in the Housewares Division of Nesco, Inc. Prior to this, Mr. Blumenschein was employed as a salesman in the Chicago area for Nesco.

Mr. Howlett also announced the appointment of **James Dodge** as assistant sales manager of the Electrical Division of Nesco.

•

Parker H. Erickson, vice-president in charge of sales for **Bendix Home Appliances, Inc.**, South Bend, Ind., announces the appointment of **W. A. MacDonough** as merchandising manager of the company.

Mr. MacDonough comes to Bendix from Cooperative Duluth, where he was advertising and sales promotion manager for the last two years. Before that, for several years he was a sales executive for the Home Appliance Division of General Mills.

Mr. MacDonough will work closely with Bendix distributors throughout the nation.

F. L. Sacha

Think of it! 160,000 square feet devoted to renewal parts exclusively!

Everything about this modern, up-to-date layout is so well organized and integrated that orders are filled and dispatched with assembly-line speed.

NEW WESTINGHOUSE RENEWAL PARTS CENTER
NEWARK, OHIO

Yes, our NEW Renewal Parts Center is Geared to Help Westinghouse Retailers give the kind of Service that Builds Satisfied Customers

Everything about this mammoth new parts center at Newark, Ohio, is laid out for hair-trigger, hurry-up service. Fast as the service is at all times, it's doubly fast in case of emergency. Special orders are filled and shipped within a few hours.

With abundant stocks of all needed items, back orders are reduced to a minimum. To keep well ahead of demand, we keep on hand more than four and a half million pounds of renewal parts.

Another advantage is the central location of the Newark plant. Parts can be shipped by air express, railway express, parcel post, truck or railway freight.

With this new parts depot backing them up, Westinghouse distributors are now in position to offer their retailers the finest, fastest service in the appliance industry. It's bound to pay off in repeat business.

WESTINGHOUSE ELECTRIC CORPORATION • Appliance Division, Mansfield, Ohio

YOU CAN BE SURE ..IF IT'S Westinghouse

See T-V's Top Dramatic Show—"STUDIO ONE"... Every Week

Product Parade

Zenith Record Changer

A NEW "Cobra-Matic" record changer which automatically plays not only today's record speeds of 33-1/3, 45, and 78 r.p.m., but also any speed from 10 to 85 r.p.m., is now featured in all of Zenith's 1951 line of radio and television console combinations and newest table radio-phonographs, manufactured by Zenith Radio Corp., 6001 W. Dickens Ave., Chicago 39, Ill.

The Cobra-Matic, which accommodates twelve 7-inch, twelve 10-inch, or ten 12-inch records, plays any speed within a wide range from 10 to 85

r.p.m. The Cobra-Matic has the means to compensate for any motor variations or any differences in line voltage which slow down or accelerate the movement of the turntable and, in turn, affect the accuracy of reproduction.

Another feature of the new changer is its use of the Cobra-Tone Arm, which is light in weight—less than one-half an ounce—and its design permits playing of standard and micro-groove records without change or adjustment.

There are only two controls to operate. One control on the calibrated brass panel is set for any size record—7-, 10-, or 12-inch. For replaying favorite passages, the manual setting is used. The other control is set for speed—33-1/3, 45, 78—or any speed from 10 to 85 r.p.m.

•

1951 Crosley Lines

COMPLETE NEW 1951 lines of refrigerators, freezers, ranges, and television and radio receivers have been announced by the Crosley Division, Avco Manufacturing Corporation, Cincinnati, Ohio.

The 1951 product lines—largest in Crosley history—include 23 television receivers, nine series of radio models, 11 Shelvador refrigerators, 10 electric ranges, and eight home and farm freezers. In addition, two special corner base cabinet models have been added to Crosley's full line of electric water heaters, and the kitchen equipment line has been augmented by a new model "Silent Server" cart designed "for new convenience in the moving of foods, beverages, and dishes."

Outstanding new developments revealed by the Crosley announcement include an automatic refrigerator defrosting system that defrosts so rapidly frozen foods and even ice cream remain frozen, a television screen that allows unusually wide angle viewing and eliminates light reflections; "mastermind" electric range controls, with five-way timing, that automatically turn oven and surface heating units on and off, and freezers equipped with automatic ice cream freezers and special shelves in the lid to hold added frozen food packages.

•

West Bend Coffee Maker

A NEW AND FULLY automatic coffee maker, the "Flavo-Matic," has just been brought out by West Bend Aluminum Co., West Bend, Wisc.

Retailing at $9.95, this coffee maker has a capacity for six to eight cups of coffee with a thermostat control to keep coffee hot for serving. The perking action, which starts in less than a minute after the cord has been plugged in, stops automatically at the flavor peak, when the thermostat then goes into operation.

•

Combination Iron

NOW AVAILABLE to dealers from the Proctor Electric Co., Philadelphia, Pa., is the new Mary Proctor "trigger action" Never-Lift combination steam and dry iron.

With the addition of a blue plastic water reservoir which hooks easily onto the back of the iron, this completely automatic dry iron converts instantly to a steam iron. Instant conversion back again to dry ironing is possible by a turn of the knob at the back of the reservoir. It is never necessary to empty this reservoir.

Water level is always visible in the reservoir, and the iron can be filled

with tap water while still connected to the electric outlet. Steam is issued instantly, drop by drop, with always the same amount, no matter what the water level is in the tank. The iron steams only when in ironing position, and comes with a detailed fabric dial with clearly marked steam range.

•

Telechron Electric Clocks

SEVEN NEW electric clock models have been introduced into its product line by Telechron Inc., to power an intensified sales campaign this fall.

Led by the "Everset," a "set-and-forget" alarm clock that operates automatically on a 24-hour cycle, the new models run the gamut from ultra-modern to Colonial styles.

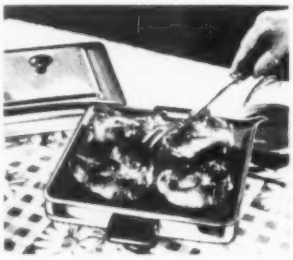
Alarm clocks in the group of new models include, beside the "Everset," the "Tel-A-Glow," luminous throughout in case, dial, hour dots, and hands; the "Mentor," framed in polished brass with numerals pierced in wide gold-color bezel; the "Yachtsman," a steersman's wheel in buffed brass styled with instrument-like precision; and the "Tribute," a modern piece with a diamond-cut sun tint dial and wide-angle vision.

The new convenience models in the line are the "Suave," a globe of crystal, with white-cowled bezel and gold-color numerals and hands, and the "Somerset," a stately clock in Colonial design with hand-polished mahogany case and decorative glass panel.

•

Arvin Lectric Grill

FOR COMPACT, quick cooking, Arvin Industries, Columbus, Ind., has introduced the new Arvin Lectric Grill, which toasts, fries, grills, warms soup, heats water, and makes popcorn.



A tight-fitting lid prevents grease from splattering when the grill is used for frying, and an important convenience feature is the drip spout that drains drippings from fatty foods into a saucer placed beneath it.

There are nearly 100 square inches of cooking surface in the grill, enough for a steak or several chops, four toasted sandwiches, or enough bacon and eggs for a family.

American Beauty
ELECTRIC IRONS

THERMOSCOPE TYPE

33-AB
79-AB

A weight, a shape, a size for household – as well as every industrial and manufacturing – use.

Adjustable-automatic type, with thermoscope; for household use. No. 33-AB covers 3-pound weight; No. 79-AB, 4½-pound weight.

Nos. 7-AA—9-AA—10-AA

Adjustable-automatic type; for use in laundries and dry-cleaning shops—in 7-, 9- and 10-pound weights respectively; detachable cord; separate stand.

Nos. 55-AB—60-AB

Adjustable-automatic type; 5½- and 6½-pound weights; for industrial usage such as in shirt factories. Available also in detachable cord, separate-stand, type.

Nos. 12-AA to 24-AA

Adjustable-automatic type; oblong shape; in 12-, 16-, 20- and 24-pound weights; detachable cord, separate stand. V-shape is available in 16- and 20-pound weights.

Catalog Nos. 7-AA to 24-AA cover AC industrial type irons. The same irons are made for DC usage. The DC type, Nos. 7-DC to 24-DC, is equipped with a 3-conductor cord through which the thermostat actuates the separate relay—which is supplied with each DC iron—for current-control.

Nos. 5½B—5½BPC

Household size, non-automatic type. Made with detachable cord—No. 5½B—and attached cord—No. 5½BPC. Both supplied with separate stand. Can be used on either AC or DC.

Nos. 7-BB—9-BB—10-BB

Non-automatic type in 7-, 9- and 10-pound weights respectively. For laundry or similar industrial usage. Equipped with detachable cord and separate stand. Can be used on either AC or DC.

Nos. 12-BB—16-BB—20-BB—24-BB

Non-automatic type, oblong shape in 12-, 16-, 20- and 24-pound weights. V-shape available in 16- and 20-pound weights. Equipped with detachable cord and separate stand. Can be used on AC or DC.

AMERICAN ELECTRICAL HEATER COMPANY
DETROIT 2, MICHIGAN

WATER-HOTTERS *Sell Faster*

because of *"See-em"* features!

Hotter water—electric models deliver 6.9% MORE of it than utility requirements

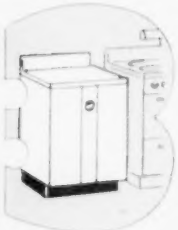
In leading national magazines, famous *"Water-Hotter"* principle advertised to boost your volume

Ten-Year and 5-Year Protection Plans help clinch sales

Easy-as-pie to install—just LOOK . . .

1—*Just slide it into place*

2—*Hook it up*



3 *minutes*—*The job's done!*

WHITE'S

fast selling...profit-building porcelain table-top electric

"WATER-HOTTER"

Can't tell which is faster, clinching the sale or installing the *Water-Hotter*. Both click through like lightning—and it's quick money in the bank for *White* dealers! Want "in"? Telephone, telegraph or write your *White* distributor or *White* direct. No better time than NOW!

Electric — Round and table top models

or Gas — Round models only

White

WHITE PRODUCTS CORPORATION

Hot Water Specialists Since 1930

Middleville, Michigan

Patented Copyright 1950, White Products Corp.

UL

Automatic Coffeemaker

A FULLY AUTOMATIC coffeemaker embodying features of more expensive models has been announced by Dominion Electric Corp., Mansfield, Ohio.

Model No. 1601, the "Brew-O-Matic," has full nine-cup capacity and is

equipped with a "Flavor Selector" dial, which enables the user to brew mild or strong coffee according to taste. An indicator jewel glows when the coffee is brewed and continues to glow while the coffee is being kept at proper drinking temperature. The coffeemaker is plainly marked for the desired number of cups required for ease of use.

•

Dormeyer Toaster

THE NEW Dormeyer Toastmaker, manufactured by the Dormeyer Corp., Chicago, offers a special rewarming feature to keep toast warm once it has been toasted. Extra slices can be kept warm without burning until served.

Other features of the toaster include an electric "toast timer," enabling timer dials to be set to preferred shades. The "Check-It Lever" gives two shades of toast at one setting. By raising the lever, you can take out the lighter slice, release, and a darker toasting process is continued for the other slice. At the same time, toast can be inspected without interfering with the toasting cycle.

A small screw turns at the bottom to open the toaster tray. Crumbs may then be wiped away with a cloth. The toasting process is started and completed automatically by pressing downwards on a cool plastic handle. The new toaster sells for $19.95.

•

Radiant Heater

A NEW COMPACT portable radiant heater has been added to the line of Emerson Electra Combination Radiant and Fan-Type Heaters, manufactured by Emerson Electric Mfg. Co., St. Louis 21, Mo.

The heater is equipped with two radiant heater elements formed of nickel-chrome alloy wire coiled on molded ceramic rods, placed in front of a chrome plated heat-ray reflector

having an area of 167 square inches. A distinguishing feature of this heater is wide heat distribution, radiating over an area 7 feet wide at a distance of 3 feet from the heater. It has a capacity of 4450 B.T.U. per hour and operates on 115 volts a.c. or d.c.

Ideal for warming small areas such as bathrooms, nurseries, and bedrooms, it is available in either metalex-enamel bronze or ivory enamel finish with chrome plated trimmings. List price is $15.95, and the heater carries the Emerson-Electric 5-year factory-to-user guarantee.

•

Electric Dishwasher

A NEW AUTOMATIC electric dishwasher that will wash and dry up to 100 pieces of china, glassware, and cutlery in less than 30 minutes has been announced by the General Electric Company, Bridgeport, Conn.

A preliminary power rinse has been incorporated in the 14-minute washing cycle to remove loose particles from the dishes and flush them from the tub before the washing action starts. A wash-action regulator has been added to permit uniform washing of both full and part loads of dishes. An electric heating element has been built into the bottom of the tub to maintain the wash and rinse waters at the most efficient temperature. The same heating element reduces dish-drying time to only 15 minutes.

The new dishwasher, a top-opening model, is fully automatic. All the housewife has to do is load the racks, fill the detergent cup, close the lid, and turn on the motor. The machine then automatically rinses, washes, and sterilizes the dishes, opens the lid, and dries the dishes.

•

Perfection Electric Range

NEW to the electric range line manufactured by Perfection Stove Co., 7600 Platt Ave., Cleveland 4, Ohio, is the 36-inch Model 1036.

The cooking top is of the one-piece turret type. Work space is in the center of the range, with a pair of fast-heating, double coil Chromalox units on each side. Two of these units are 2000-watt giant size, and two are regular 1250-watt units.

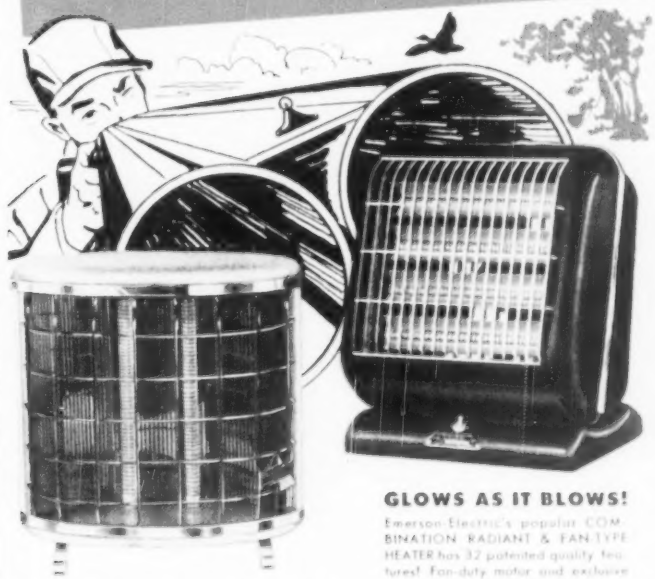
A seven-speed switch controls each unit. Coils are self-centering and feature a wide, flat-top area that gives the bottom of utensils for most efficient heat transfer.

The fully insulated oven is 16 inches wide, 20 inches deep. Vitreous-porcelain enamel lined, it has automatic heat control, is heated by a 2000-watt unit. The waist-high broiler has a 5000-watt heating unit.

Conveniently located at the center of the splasher back is an electric receptacle outlet. There is a large drawer compartment storage space at the left

AIM NOW... for bigger profits with EMERSON-ELECTRIC'S NEW

DOUBLE-BARRELED HEATER LINE



BRAND NEW FOR '50!

...a great new Emerson-Electric portable RADIANT HEATER... built to Emerson's exacting top-quality standards... designed to offer your customers plenty of quick, wide-angle, radiant heating comfort, at moderate cost. Retail price, $15.95

GLOWS AS IT BLOWS!

Emerson-Electric's popular COMBINATION RADIANT & FAN-TYPE HEATER has 32 patented quality features! Fan-duty motor and exclusive individual Heatray-Reflectors combine penetrating fan-forced heat with a warm, cheerful hearthside glow. Retail price, $24.95

Plus applicable Federal Excise Tax

2 GREAT MODELS...EACH IN 2 POPULAR COLORS!

5-YEAR FACTORY-TO-USER GUARANTEE at No Extra Charge

Backed by the Famous 5-Year Guarantee

There's no limit to the heater profits you can bag this Fall! Here's a complete line — an answer for every customer use — loaded into *two* fast-moving models! Both are available in new smooth baked metalesvent bronze or lustrous ivory enamel finishes. And both carry the famous sales-clinching Emerson-Electric 5-Year Factory-to-User Guarantee!

Stock up now... contact your Emerson-Electric Wholesaler, or write for new Catalog and Sales Help Folder No. 805.

The Emerson Electric Mfg. Co., St. Louis 21, Mo

EMERSON ELECTRIC MOTORS • FANS APPLIANCES

NEW

TRAFFIC STOPPING
EYE APPEALING
PACKAGE

ONLY
EVERHOT
HAS THE
Comfortrol

Beautiful gray plastic exterior with on-and-off switch and large temperature selector dial. All component parts mounted on shockproof metal. Each dial position is automatically illuminated. Adjustments can be made by sight, sound or touch *in the dark*.

Cat. 922 — 72" x 86". Dual control, full size blanket. Warmth of each half of blanket may be regulated separately if desired. Retail price $49.95.

Cat. 921 — 72" x 86". Full size blanket. Single Comfortrol. Retail price $42.95.

Cat. 923 — 66" x 86". Twin size blanket. Single Comfortrol. Retail price $39.95.

• •

All models available in Desert Rose, Jupiter Blue, Berkshire Green.

...for FAST moving

Everhot

AUTOMATIC ELECTRIC BLANKETS

with exclusive Therm-o-loom... an entirely new blanket textile, luxuriously soft—a joy to launder.

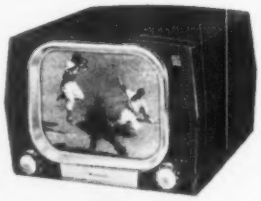
Now there's a colorful new package for Everhot electric blankets especially designed for customer appeal. It attractively frames the blanket, shows fleecy texture. Will make traffic-stopping counter and window displays (easel packed in every carton). Has strong gift appeal . . . is easy to handle for delivery . . . keeps blanket spotless. Order now for early delivery. See your distributor or write Swartzbaugh, Toledo 6, Ohio.

SINCE 1884
Swartzbaugh
OF TOLEDO

Motorola 1951 TV Line

TWENTY-NINE new television models, ranging in size and type from a 14-inch plastic table set to a deluxe 20-inch rectangular tube television-radio-phonograph combination comprise Motorola's new 1951 "Fashion Award" line.

List prices of the new television receivers start at $169.95 for the 14-inch table model and extend to $600.00 for the deluxe 20-inch rectangular tube combination in limed oak. There is a wide selection of 16- and 17-inch models, 19 in all, with prices ranging from $199.95 to $469.95. Five 19-inch sets list from $339.95 for a mahogany, open face console, to $419.95 for a full-door limed oak console.



Motorola offers in its model 20F1 a television-FM AM radio-phonograph combination with a 20-inch rectangular tube. This receiver comes in either mahogany or limed oak, respectively selling for $575.00 and $600.00.

A "good neighbor" shield to minimize the oscillator radiation which causes neighborhood television sets to interfere with each other's operation is one of numerous technical innovations and improvements in the new line.

Another feature of the line is the addition of improved power transformers. These give the Motorola sets what is known as a cold chassis, resulting in better operation in fringe areas.

Additional technical features of the new line include special fuses to insure against fire from the extremely high voltages used in television and sub-assembly construction of the chassis. By constructing the sets in three sub-assemblies consisting of the tuner, the power supply and the replaceable I.F. strip, Motorola has simplified and speeded production. This has helped to reduce the ultimate cost to the consumer and is of aid in any repair work.

Whirlpool Thrift Model

A new, fully automatic washing machine which retails under $200 has been introduced by the Whirlpool Corporation, St. Joseph, Mich.

The Thrift Model automatic washer has the same nine-pound capacity as the deluxe model, although the machine is slightly smaller. It is compact and adaptable for small homes, apartment building projects, and self-service laundries. Mechanically it has all the proven Whirlpool features from the one-third horse power motor to the exclusive "Suds-Miser," which is optional for an additional $20.

Three-temperature water selection, automatic filling at any water pressure, the exclusive Whirlpool seven rinses, top loading, and balanced design agitator are standard on the Thrift Model. It saves water on partial loads, for when the operator has filled it to the desired level she simply advances the control dial to any selected time under 10 minutes, and the wash portion of the cycle starts.

•

Refrigeration

(Continued from page 109)

lowing offer:

1. To run a classified ad in the daily newspapers every day for a week offering the old equipment for sale.

2. Inquiries are directed to the refrigeration dealer's office. Persons responding to the ad are taken to see the equipment at a time convenient to the owner.

3. At the end of the week the used equipment goes to whoever makes the best offer, with a check made out directly to the owner.

4. When the new equipment is delivered, Abbott's truck picks up the used equipment and delivers it to the person who has just bought it.

All of this entails no cost whatsoever to the party who buys the new equipment, but he must put in his order before the classified ad is inserted.

The plan has the following advantages to the refrigeration dealer, Mr. Beline points out:

1. It facilitates the sale of new equipment at a fair price and places a higher value on the trade-in.

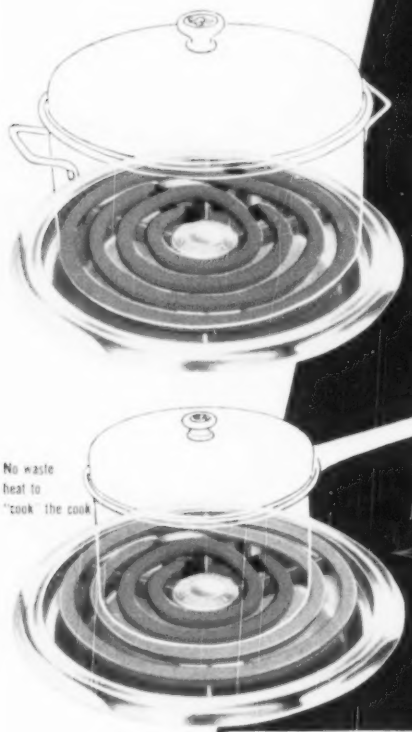
2. It saves the double charges of hauling the old equipment away from the new place of installation to the firm's warehouse.

3. It saves the dealer's time in selling used equipment, enabling

For faster, easier electric range sales...

Emphasize the

Chromalox difference!



uniform overall Heat

Accurately controlled heat that goes evenly into the largest cooking utensils.

plus "HotSpot" Heat

That saves up to 45% of the electricity used for cooking in small pans and percolators!

plus up and out Reflector

Tubes lift up and are self-cleaning; reflector pan comes out for easiest cleaning.

"The Switch is On"
To help you sell more electric ranges.

Catalog RU-149
To help you service electric ranges and water heaters.

CHROMALOX

The finest Electric Range Unit ever built

EWDIN L. WIEGAND COMPANY, 7600 THOMAS BOULEVARD, PITTSBURGH 8, PA.

C. E. Rogers, [illegible] St., N. E., Atlanta, Ga.; J. B. Ward, [illegible], Cincinnati 10, Dallas 1, Texas; M. & M. Bldg., Houston 2, Texas; [illegible], New Orleans 13, La.; [illegible] St., Boston 10; Tulsa 3, Okla.; W. H. Phillips, P. O. Box [illegible], Raleigh, N. C.; W. R. [illegible], Philadelphia 24; [illegible] Lamb Ave., Richmond 22, Va.

his sales staff to concentrate on new products only.

4. The buyer of used equipment can't blame the refrigeration dealer for defects or repairs. As a matter of fact this buyer often-times proves a good prospect for the new equipment himself.

Newspaper advertising is constantly used by Abbott to put their message across. One of the most effective and readable insertions was that of a circled newspaper clipping on a simulated tear sheet headed "Warning! Washington Businessmen." The circled item was captioned, "Don't Buy Air Conditioning Unless Profitable." It went on to detail the firm's Investment Analysis Service which will show a merchant how to determine the amount of profit to expect from air conditioning.

The salesmen's table of organization calls for division of the staff into two major specialists: two of them are used to handle a complete detail from opening to closing, taking in stores and other large users of air conditioning and special applications. Six are assigned as package salesmen, handling such items as water coolers, home freezers, room air conditioners, de-humidifiers, beverage coolers, and reach-in refrigerators.

These men are paid under a triple compensation plan. Besides a weekly salary plus a commission for items sold, they get a bonus if they meet a quarterly quota. The quarterly bonus is devised to take advantage of seasonal helps in rounding out their yearly quotas. The whole setup means a better class of salesmen with more stability and yearly assurance of income, Mr. Beline points out.

Sales meetings are held every morning in a special room set aside for that purpose in the rear of the showroom. There ideas are hatched and problems thrashed out in the open. One profitable plan that came out of these inter-departmental forums was the color approach to room cooler sales. Prospects are given their choice of 15 colors for this item at a slight extra cost with the assurance that it is for special color only.

"We never use the term 'repainting' for room coolers," Mr. Beline stated emphatically, "because that way a prospect might get the idea that he is getting defective equipment which needs renovation."

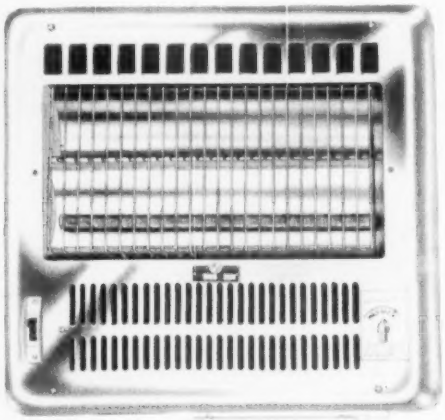
The headquarters is set up with showroom and executive offices on the first floor with a driveway next to the entrance to permit truck deliveries. The second floor rear has a platform on a direct level with a railroad siding to facilitate incoming shipments. There is stored a heavy inventory of parts. On the third floor are the machine shop, baking ovens, spraying booth, and testing devices. Much of the household equipment is reconditioned for resale by other dealers.

An innovation which Abbott has used profitably for its main-

NOW to meet the demand of YOUR CUSTOMERS

Two New Wall-Insert HIGH WATTAGE

RADIANT HEETAIRES...



1500 and 2000 Watts — Two Heating Zones or with Built in Thermostats

Good looking, compact, easily installed, they are equipped with the patented NEO-GLO elements — for cheerful, comfortable *immediate radiant heat!*

WRITE for the complete details and specifications — and the name of your nearest HEETAIRE wholesaler.

Tested and listed under re-examination service by Underwriters' Laboratories, Inc.

207 - 208 *HEETAIRES Have All These Features:*

- Abundant Infra Red Radiant Heat
- Choice of 2 Heating Speeds or Thermostatic Controls
- Highly Polished Chromium-Plated Reflectors
- Simple, Easy Installation
- Safe, Clean, Controlled Instant Fumeless Heat
- Absolutely Quiet

MARKEL ELECTRIC PRODUCTS, INC. ◆ **LA SALLE PRODUCTS, INC.**

145 SENECA ST. • BUFFALO 3, N. Y.

tenance service is the distribution of a simulated auto plate with a yellow background on which is printed in blue, "Call De-2300, Abbott Refrigeration Co." It is nailed on the wall back of the compressor on every job and serves as a visible reminder as to whom to call for repair work. Placed on the firm's trucks, it also helps to attract attention to this service.

Abbott often loans its equipment for display purposes in many of the exhibits and shows held in and around Washington. On one occasion they placed a display case in the restaurant show held at the Hotel Statler, at the request of a meat supplier, and reaped beneficial publicity and some inquiries as a result.

Abbott Refrigeration was originally part of a refrigeration manufacturer's organization under the managership of W. R. Radcliffe when it was established in 1924. In 1935, it became privately operated, assuming its present name, and as the only authorized service organization in Washington for a large appliance manufacturer. In 1948, the company actively went into the sale of commercial refrigeration and air conditioning equipment under the direction of Mr. Beline. Last year it took over its present larger quarters.

Mr. Beline was graduated from Stevens Institute in 1933 as a graduate mechanical engineer and has been in the industry ever since.

Canvassing

(Continued from page 104)

"Sure, we sold canvass," Mr. Gluth says. "And it pays. We get sales that way. Our set-up for canvassing is this: we have four salesmen working for the store. They take turns—two in two out. We park out a location that each salesman on the street is to 'work.' With this, we decide upon one appliance that he will push. I've found that's a much better way than making him a salesman of all appliances; that's true for canvassing, although we do not work with specialty salesmen inside the store.

"The appliance is chosen with regard to the territory, the incomes of people who live in the particular section of the city we have chosen; the season; and general conditions. Almost always, it is an appliance in heavy demand at the moment.

"For example, our two men are presently working in the Robert Todd housing project. This was formerly an Army camp. It has been reconverted into rental housing units for ex-GI's. We decided—and events proved us right — that portable dishwashers should be a good canvassing lead-in appliance for the Todd project. So our men are up there ringing door bells, and they have brought back some excellent sales.

"Naturally, we follow up hot leads by making house calls. But we have found that cold house calls pay too."

At Labiche's Modern Appliances, located on the corner of Baronne and Gravier Sts., in the main commercial district, Appliance Sales Manager T. Eckert has seven salesmen. "We do not canvass," he says, "but we do carry out home selling. This is always in the following up of leads. We push all appliances this way, since the only time you have to choose one or two is in cold canvassing. Our salesmen rotate with so many floor days, followed by so many street days."

Mrs. J. M. Winn, who runs West Side Appliances, 418 Opelousas Ave., reports that she and her husband work a "contact" rather than a canvassing system.

"Both my husband and I belong to many social and civic organizations," Mrs. Winn reports. "Through contacts we make in these, we sell a lot of appliances. We do a lot of phone selling, too, to get contacts. But no cold canvassing at all.

At Kirschmann's, 3060 Dauphine St., Manager Jack Gilbert says that, "We use advertising to bring customers **into** the store. I have found through experience that cold canvassing is about the most expensive way in the world to sell appliances. Most of our selling is done on the floor. Sure, we follow up by going out to the customer's home if necessary. But we plan things so that, in most cases, the sale can be closed right here in the store."

Extra Something

(Continued from page 103)

dle of clean laundry home, however, free of the responsibility of tending a conventional washing machine, etc., is the most powerful sales argument we could develop."

The results, after the introductory month of such promotion, have been outstanding, Mr. Smith pointed out. There has been an actual increase of 60 per cent in both conventional and automatic washing machine sales, while volume in all other appliance departments, including refrigerators, home freezers, ranges, etc., has risen commensurately. Sales increases in the other departments are traceable to a simple policy, it was pointed out. While the automatic home laundry equipment is carrying out the washing, drying, or other processes, the customer may easily be shown outstanding features of other major appliances—and thus, it is not unusual for a washing machine demonstration prospect to wind up purchasing a new home freezer as well.

Home Freezers

(Continued from page 101)

keep the appliance in the basement, while only 44 per cent of rural owners do so. Of the total farm homes in the country, 58.7 per cent have basements, and of this, 4.8 per cent were new in 1948. Garage, utility room, pantry, and back porch are mentioned infrequently as places where freezers are kept.

One section of the study indicated that in most homes built before the war, the basement will be best suited for the freezer. The postwar basementless "ranch" house usually has utility room area where the freezer can be kept. First floor location is considerably more convenient since it eliminates carrying foods

Highest Quality Water Heaters at COMMON SENSE COST

Important selling features make these water heaters move fast and yield greater profits to you.

- Elno Rustopper Anode Rod
- Wheeling Extra Heavy Tank
- Westinghouse Heating Element and Thermostat
- Fibre Glass Insulation
- Ten year guarantee and warranty plan
- Peak Performance — — Peak Profit
- Table Top and Upright Models

Write for Full Information and Literature

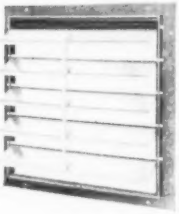
BELL

ADACAR MANUFACTURING CO.

NAPIER FIELD DOTHAN, ALA.

Elgo Ventilating Specialties

Extra Snug-fitting Automatic Shutter



Assures an extra snug, tight fit when louvers are closed, because they are weatherstripped on inner edge instead of on outer edge. Louver blades equipped with special felt silencing pads. Unusually sensitive to air currents. Sizes from 8" to 72" — also rectangular.

Write for circular and prices

"Echo" Automatic Ceiling Shutters

Used for attic ventilation. Installed in attic floor at the base of a penthouse, the louvers being operated by the suction of the fan.

Free CATALOG

ELGO SHUTTER & MFG. CO.
2738 W. WARREN DETROIT 8, MICH.

Handbooks of Adequate Wiring

Two Valuable Booklets available with Electrical South.

"Handbook of Residential Wiring Design" and "Handbook of Farmstead Wiring Design," summarizing latest authoritative information on adequate wiring systems, may be obtained with a three-year subscription to Electrical South at the special price of $2.50 for a limited time. Send name, address, and remittance at once to make sure of getting your copies.

ELECTRICAL SOUTH

806 Peachtree St., N. E. Atlanta 5, Ga.

The NEW Koolmaster Awning Fan offers a chance to install complete home ventilating for less than $100.00 — with a bigger margin of profit for the dealer.

It means ventilating for more homes — at the average home owner's price level, with easy installation (only a few screws and wrench are necessary for quick assembly).

It means — quicker sales and more profit for the dealer.

It means — less mess and bother — the Koolmaster Awning Fan is a package unit. Ships flat — at its flat. No more storage problems.

The Koolmaster Awning Fan offers extra protection against the sun with its aluminum housing. Runs quietly on rubber mounting for a few cents a day. Doesn't disturb the appearance of the room — fits to outside of house. No more altering or defacing building.

U. S. Pat. No. [illegible]

Exhausts through upper half of window and downward on outside of house.

Doesn't disturb the appearance of the room.

Specifications

- 24" exhaust type fan with Torrington "Varified" blades.
- Width of housing 33½"—will accommodate itself to windows 28", 30", 32" or 36" wide.
- Ball bearing fan shaft bearings.
- 5000 C. F. M.
- ¼ H. P. heavy duty vertical shaft motor.

*Registered Trade Mark

Write today for complete information — Dept. ES

AIR EQUIPMENT CO.
1713 West Carroll Avenue Chicago, Illinois

56 years of experience and progressive management

up and down stairs, even though the average family opens a freezer only once or twice a day.

Another factor that has helped familiarize customers with the advantages of storing frozen foods is the inclusion of combination refrigerator-freezer models in most manufacturers' lines. While all makes do not provide proper temperatures in the freezer compartments, most customers who own late model refrigerators store frozen foods for periods as long as two weeks.

Television Theater

(Continued from page 99)

ple. Maybe they won't buy the first time. But eventually they will. And you never can tell about the person coming in.

"Just recently a couple came in out of curiosity. These people said they had no intentions of buying, but were just curious. They went away owning one of our $250 sets."

Much consideration was given to a service policy and Applegate believes that the decision to use top bracket personnel put the Television Theater service department at the top.

Walter I. Conner installed radar at Hickman Field after it was blasted by Jap bombs. He had other equally responsible military assignments. He was part of a TV station organization when employed by the Dallas Television Theater. His title is chief of engineering, but the supervisory work he does is that of service manager.

Conner personally inspects every installation of a set sold, and under him at this writing are seven additional men of high qualifications. One responsibility of the service department is to check the operation of every set on the floor each morning. Doors open every morning at 8:00 a. m. except Sunday.

"We believe we have a service department unsurpassed," says Applegate. "Of course, this department will be constantly going back to users, checking service—and getting new prospect names. But we sincerely believe that service is one of the most important, if not the most important factor, in a television dealership.

"We are giving our customers the very best installation and service available. That has resulted in our acquisition of a substantial service volume resulting from the sale of sets by competitors. Our service volume is growing so rapidly that within a short time we will add another crew. And a crew consists of two men and a truck."

Making it easy to get into the dealership is followed up by daily advertising in Dallas newspapers. Each daily advertisement amounts to a space one column by 11½ inches, in which one of the sets in stock is featured, together with a listing of TV programs for the day. Needless to say, this advertising invites one and all to the Television Theater to see and hear.

"Wrestling matches seem to have a tremendous attraction for television fans," he points out. "So we decided that our promotion would include personal appearances of wrestlers, and these appearances were advertised.

"But it didn't work out too well. Wrestlers had to check in for physical examinations at a fairly early hour in the evening. This forced them to make personal appearances about dinner time."

The sales staff at the present time includes 14 people. These operate according to the usual plan, with on-and-off-the-floor days, and they are high in the caliber of personality and character.

"Experienced salesmen?" Applegate echoed a question. "No, there is no such thing in television, except those a dealer trains. And we much prefer the men with no experience, so we can train them ourselves."

Before opening of the Television Theater there was an intensive period of training for men selected. Three times a week for three weeks these men worked under direction of representatives of the four factories. And their training was climaxed in a three-day session under Applegate.

"Yes," concedes Applegate, "we have made what I would term remarkable progress for having been in business such a short time. We are operating on the black side of the ledger.

"But I don't believe we have penetrated the surface of possibilities in television sales. We continually stock 250 sets so we will be able to take advantage of the market we are convinced exists.

"We firmly believe the Television Theater will be a thorough success as the market expands. And much of the credit must be attached to two decisions we made before we opened—not too much formality on the outside to awe the prospect, and the very best talent in the service department."

DAVIS

Headquarters FOR ELECTRICAL CORD SETS

"WRIST ACTION" CORD SET

Wireless swivel plug turns, bends, swings, spins — eliminates all cord wear, 95% of all cord troubles. Exclusive, patented design. A proven seller. Attractive display card free.

RANGE CONNECTORS

Finest quality cord and receptacles, including new flush range receptacle. Underwriter's Approved. 220 volt, 50 amperes. Eliminates costly electrical work in connecting ranges.

See your jobber or write direct for full details and prices.

DAVIS Mfg. Company

PLANO 1, ILLINOIS

Southeast Rep. M. K. Dewees Co. Walton Bldg., Atlanta, Ga. — Southwest Rep. M. C. Hoe Co. Thomas Bldg., Dallas, Tex.

For your needs in WASHER PARTS TRY

Refrigeration Supply Co.

1831 W. Broad St.

Richmond, Va.

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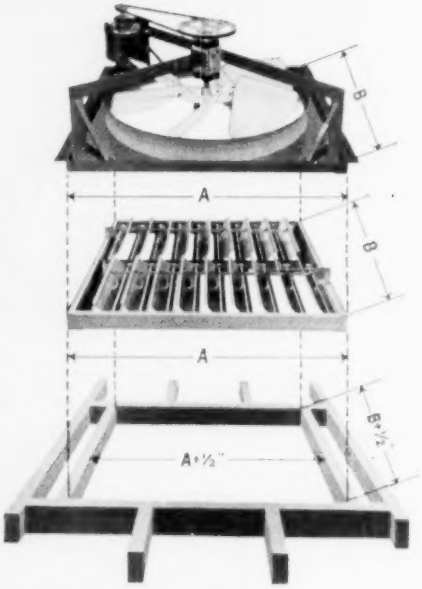
CTI PROPERLY TRAINED MEN HAVE THE "KNOW HOW"
PRACTICAL SHOP TRAINING
in
ELECTRICITY, MAJOR APPLIANCE
Service, Maintenance, Installation
Write for Catalog ES5—Veterans ask about GI Training
Manufacturers, distributors, etc., when you need TRAINED men contact CTI Placement Bureau.
COMMERCIAL TRADES INSTITUTE INC.
of Alabama
200 South 20th St., Birmingham, Ala. — Phone 7-0555
Member: Southern Association of Private Trade Schools

The *REED* Vertical Air Discharge Attic Fan



Requires An Attic Clearance of ONLY 13⅜"

INSTALLATION DATA

MODEL	FAN and SHUTTER A	B
RVU-24	32"	32"
RVU-30	36"	36"
RVU-36	42"	42"
RVU-42	48"	48"

CASH in on the increasing demands of thousands of home owners for the new, popular "lay down" Reed Attic Fan. Depend upon a Reed for low cost of installation, quietness, powerful air delivery and trouble-free service.

Write for Free, Completely Illustrated Catalog

Certified Ratings — Performance Ratings are in accordance with Standard Test Code for Centrifugal and Axial Fans — Approved by PEMA

Reed
UNIT-FANS, INC.
Manufacturers of Ventilating Equipment
1001 St. Charles Ave.
New Orleans 8

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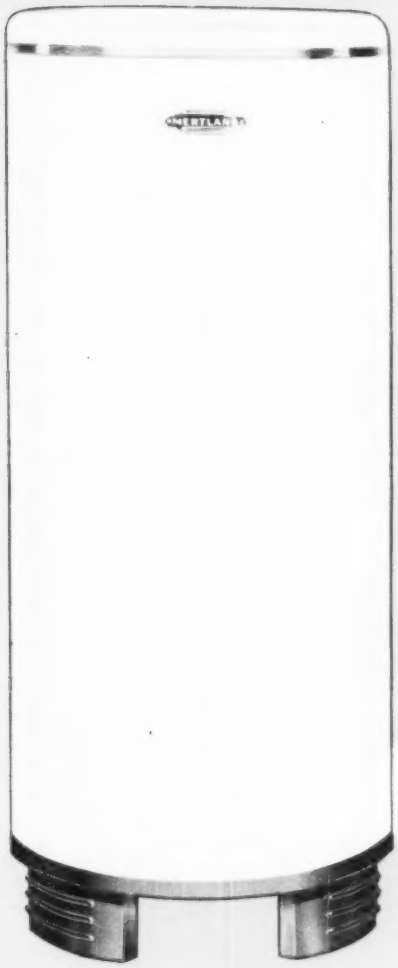
Happy customers make happy dealers



• MERTLAND Automatic Electric Water Heaters are made in complete size range from 10 to 100 gallon round, and 35 to 45 gallon table top . . . the right size for every use. People everywhere like Mertlands. They give wonderful service, are outstanding for good looks, have every modern convenience feature . . . and the prices are right. The longer you sell Mertlands, the better pleased you will be with the way the line delivers satisfaction to your customers, steady profits to you.

MERTLAND

AUTOMATIC ELECTRIC WATER HEATERS

UL APPROVED

THE HEDGES LINE

M. M. HEDGES MANUFACTURING COMPANY, INC.

MEMBER OF NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION

CHATTANOOGA, TENNESSEE

• WATER HEATER SPECIALISTS •

It's Rocking the Industry in News . . . Excitement . . . Sales!

ZENITH'S AMAZING . . . INCREDIBLE

"LAZY BONES" Remote Control TV

Complete Television Program Selection From Anywhere in the Room!

Changes Station, Picture, Sound at the Touch of a Finger!

'Never before in Zenith history has a television improvement met with such enthusiasm . . . such clamoring public interest and demand.' Overnight, Zenith's marvelous "Lazy Bones" Remote Control Tuning has set a new standard of enjoyment in television.

Now, from clear across the room, Zenith's televisor, with "Lazy Bones" Remote Control and the famous turret tuner automatically change programs . . . completely adjust station, picture, sound, from a tiny control in the palm of the hand. And there's nothing more to tune! Not one single knob to adjust or restune. All the necessary adjustments are made instantly . . . automatically.

Just one eye-opening demonstration and shoppers become buyers . . . leaders in their own homes for "Lazy Bones" Tuning Ease, the biggest thrill in television yet! Feature it . . . promote it . . . watch your sales climb higher and higher with Zenith . . . all through '50!

Demonstrate These "Most Wanted" Television Features . . . You'll Find Them All in Zenith and Nowhere Else!

1 **New Reflection-Proof Blexide Picture Tube.** In normal viewing position you enjoy pictures free from window and room light reflections, as well as from glare, even in daylight or fully lighted rooms, the way doctors recommend viewing.

2 **New "Super-Range" Chassis.** Brings in pictures far clearer than before . . . in difficult or distant outlying locations, where signals are too weak for other televisors.

3 **Connection for Phonevision.** If and when the great Zenith development is approved as a commercial service and thereby is made available on present standards, and may be attached to bring high class, costly television programs right into your home.

4 **Built-in Provision for Receiving the Proposed New Ultra-High Frequencies** on present channels. With a Zenith, UHF tuner units can be readily added to the turret tuner, so that you will not have to buy a new set and will not have to use an external antenna.

5 **15 Millionths-of-a-Second "Gated" Automatic Gain Control.** Virtually eliminates picture flutter from airplanes, cars, electric etc . . . by opening a radionic "gate" for 15 millionths of one second, then closing it against interference.

6 **Pre-Tuned "Picturemagnet" Antenna in All Models.** Built-in and requires no adjustments. Eliminates need for external antenna in most locations.

"Lazy Bones" Remote Control optional at small cost on all 1951 Zenith TV models.

ZENITH RADIO and TELEVISION

THE ZENITH OF RADIO AND TELEVISION

Zenith Radio Corporation, Chicago 39, Illinois • Type TV-1951-1 • Zenith Radio — the Registered Trade Mark • Zenith Radio Corporation, U.S.A.

ANOTHER Good Reason for using Square D Control

New "OFF-THE-SHELF" Parts Kits make normal maintenance easier than ever!

All motor starters and contactors are subject to periodic contact replacement under conditions of heavy load or frequent operation. That's why Square D has always stressed accessibility of these parts.

Now, the parts themselves are packaged in easy-to-stock kits to make that replacement job even more simple.

Each kit contains all parts necessary to replace lead contact on two or three-pole contactors and starters. Parts are individually packaged in clearly labeled envelopes. An illustrated service bulletin is enclosed to provide quick parts identification and complete installation instructions.

Ten different Class 9998 Parts Kits are available for servicing Sizes 0 and 1 manual starters, Sizes 00, 0, 1, II, and III magnetic starters and contactors, pressure, float and vacuum switches.

SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

SQUARE D CANADA, LTD., TORONTO, ONTARIO • SQUARE D de MEXICO, S. A., MEXICO CITY, D.F.

WIRING NEWS

A PERIODICAL DIGEST OF WIRING IDEAS FROM THE GENERAL ELECTRIC CONSTRUCTION MATERIALS DEPARTMENT

Master Selector Switch Adds New Remote Control Uses

Have you stopped to consider the amazing versatility added to General Electric's remote control wiring system by the master selector switch?

Replacing gangs of separate On and Off controls, the compact master selector switch, RMS-1, provides instant, positive control of up to nine different circuits.

You'll do well to use it as an added talking point in stimulating even *more interest* in remote control. Be sure to show your customers how one or more master selector switches can provide them with advantages such as these:

In Homes and Apartments

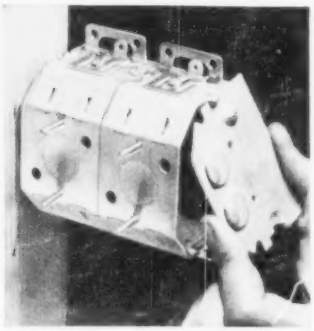
Instant bedside control of all interior and exterior lighting — an invaluable asset in emergencies. Added convenience through control of kitchen appliance outlets and attic ventilators from several different points. Control of key indoor and outdoor lights from the garage, front door, back door, and bedroom.

In Plants and Factories

Control of fire and alarm circuits. Control of watchman's circuits and provision for pathway lighting on his rounds. Selective control of aisle lights, individual work area lights, outlets, and small electrically-operated machinery from any desired point.

Then too, there are many applications for farms, swimming pools, parking lots, athletic fields, tourist cabins, schools, nurseries, hospitals — and you can probably think of many more. For further information simply check box (A) below.

New Levelock Switch Box Saves Time and Temper



Neither hammer blows nor construction-site abuse can dislodge the side plates of the new General Electric Levelock switch box. Wedging action of a new locking mechanism locks box parts securely in place — yet is simple enough to permit fast, certain assembly of switch gangs.

Leveling the box against the studding is also a faster, easier operation. Four contact points — instead of the usual three — prevent tilting or rocking of box during nailing.

In addition to nail-through holes, an extra set of nail holes through the side plates allows speedy gang mounting of the Levelock box direct to studding. Extra side plate prysmts provide for out of the ordinary installations. All prysmts are easily removed by a quick twist of a screwdriver.

A new stick-screw ear adjusts from slightly above to ⅝ inch below the edge of the new Levelock box, while an extra-sturdy bridge across the ear adds increased strength. There's plenty of space too within the bridge to accommodate the device strap.

The ingenious construction of General Electric's Levelock switch box makes possible immediate installation savings on either new construction or modernization work. Prove it to yourself — plan to try the new Levelock on your next job, or check box (B) in the coupon for complete information.

For Direct Burial — Versatol-Geoprene Cable

For underground wiring of industrial power circuits, park or airport lighting systems, farm wiring, and a wide variety of other applications, you'll find General Electric Versatol-Geoprene trench cable a perfect solution.

By combining a tough Geoprene jacket with Versatol* insulation, a trench cable of superior quality is provided. Developed specifically for direct burial in the earth — yet suitable for use in duct or conduit installations — long lived G-E Versatol-Geoprene trench cable is stubbornly resistant to the attacks of moisture, soil acids, alkalies, and abrasion. Simple to install, G-E Versatol-Geoprene trench cable offers economical installation and long service life.

Available with one, two, or three conductors in a wide range of sizes, G-E Versatol-Geoprene trench cable meets practically every underground wiring requirement. G-E Versatol-Geoprene cable is listed by the Underwriters' Laboratories, Inc., and is also listed as Type A of CAA specification L-824. For further information, check box (C) in the coupon.

*Reg. Trade Mark General Electric Company

New Hung Ceiling Box Speeds Conduit Connections

For fast, easy installation and real savings on jobs using conduit, this new hung ceiling box is hard to beat. Virtually eliminating special couplings and pipe bending operations, this easy-to-handle, eight-sided ceiling box allows conduit to enter the knockout — over the stud-bracket — from all eight angles. In addition, the heavy rear of knockouts permits conduit runs parallel to channels.

Four-point suspension of the box is provided by two sturdy mounting bars. With bars in a parallel position, the box slides back and forth for quick, easy centering. When bars are spread slightly, the box locks securely into any desired position for easy wiring.

For long life and protection from corrosion, the new hung ceiling box has been hot-dipped galvanized. For full particulars check box (D) at left.

(U. S. Patent No. 2,501,181)

Section K14-924

Construction Materials Department General Electric Company Bridgeport 2 Connecticut

A—Remote-control Master Switch
B—Levelock Switch Box
C—Versatol-Geoprene Trench Cable
D—Hung Ceiling Box

Name _____ Title _____
Company _____
Address _____
City _____ Zone _____ State _____

GENERAL ELECTRIC